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ABSTRACT

Designed to help instructors lead a group cooking experience at a base camp, the module provides information on food safety, planning a camping trip, building fires, constructing and using outdoor cooking equipment, campground cookery, and positive camping ethics. An extensive section offers 93 recipes to serve 12 people for breakfast (clam scramble, paper bag breakfast, camp pancakes), lunch (grilled sandwich supreme, sloppy joes, bagels and cream cheese), supper (original steamboats, ham kabobs, quick spaghetti), dessert (s'mores, pineapple upside-down cake, butterscotch sweets), and beverages (cocoa mocha, spiced tea, fruit milk shake). Also included in the module are: six 50-minute lesson plans on fire building, small group fire building, testing fire-building ability, making campground equipment, meal planning, and an afternoon excursion; a glossary; a 15-item bibliography; and eight appendices. Appendices include a menu suggestion sheet, basic four meal planner sheet, menu planning sheets, shopper's guide sheet, first-aid simulation situations, first-aid simulation solutions, suggested written and practical examinations, and instructor's key to the written exam. Pages marked "Student Handout," suitable for reproduction and classroom distribution, are also included. (ERB)

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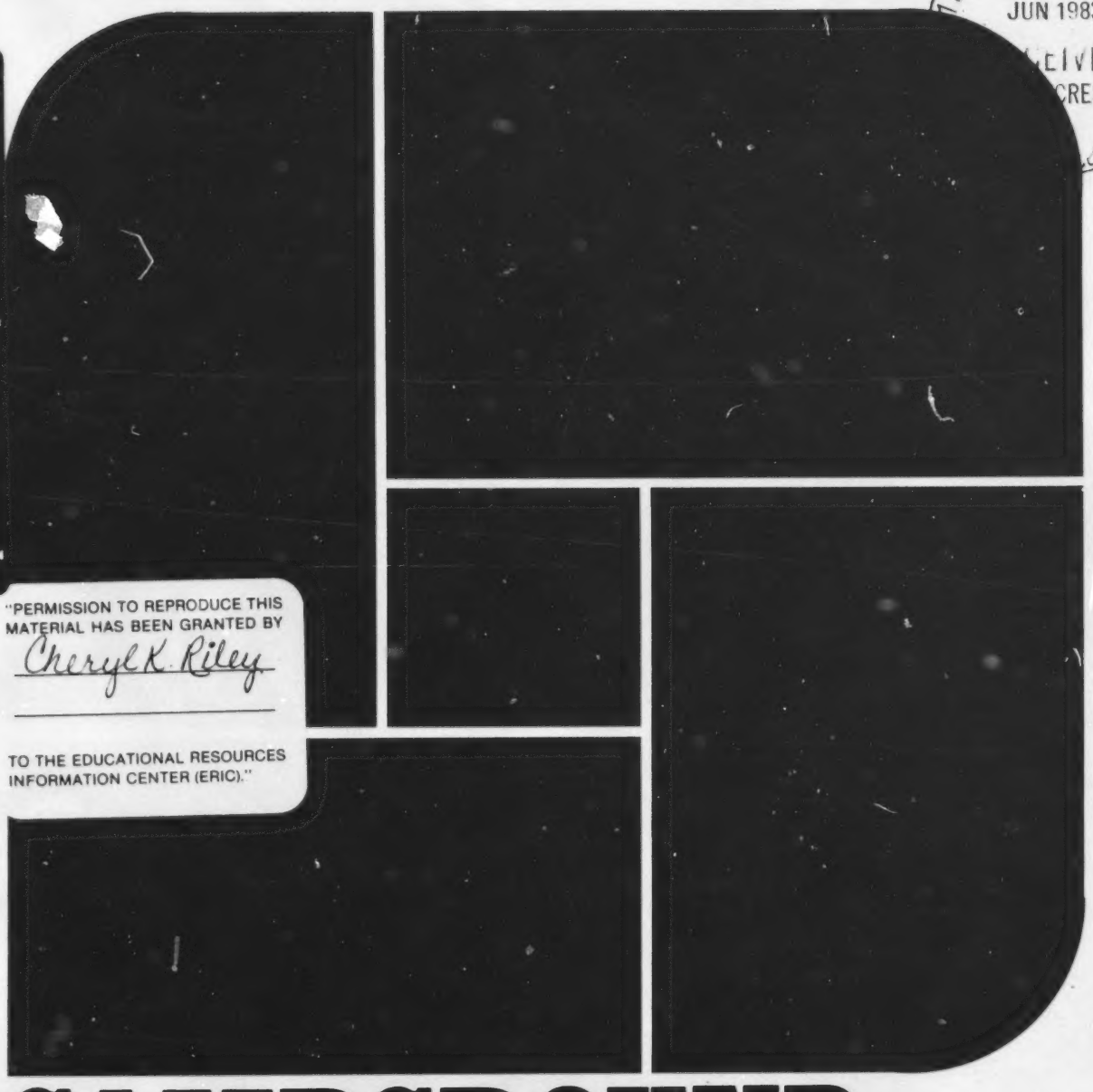

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CAMPGROUND COOKERY

OUTDOOR LIVING SKILLS SERIES

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OUTDOOR SKILLS EDUCATION MODULES

Missouri's natural resources belong to all its citizens. More and more people are going outdoors to hunt, fish, boat, hike, camp, explore, and learn about nature. The skills they use in the outdoors can have a direct effect on resources. That's why it is important to educate youth and adults in how to use the outdoors wisely and responsibly through schools, community groups, and agencies.

The Outdoor Skills Education Unit of the Department of Conservation, in cooperation with the Department of Elementary and Secondary Education, is developing educational programs to teach Missourians how to use wisely and skillfully the state's many resources for outdoor recreation. The materials, presented as modules, can be used individually or combined in a series by schools, camps, clubs, scouting groups, and other youth or adult organizations. Topics include the shooting sports, casting and angling, trapping, archery, backpacking, camping, aquatics, map and compass, and other skill areas.

Each module is a self-contained unit that includes information on the subject, lesson plans, activities, class exercises, tests, suggested visual aids, and references. Experienced instructors who have taught the subjects and successfully used the activities have written the modules.

For additional information on conservation and outdoor education programs, write the Education Section, Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102.

INSTRUCTOR MANUAL

CAMPGROUND COOKERY

OUTDOOR LIVING SKILLS SERIES

MISSOURI DEPARTMENT OF CONSERVATION
EDUCATION SECTION

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Jan Phillips teaches experiential education at The College School in Webster Groves, Missouri. She has spent the last several years designing and implementing interdisciplinary curricula to be used in the classroom. In addition, she has taught adventure education in the Masters at Teaching program at Webster College.

In 1975, Jan received the Missouri Conservation Federation's Conservation Educator of the Year Award. Her book, *Wild Edibles of Missouri,* published by the Missouri Department of Conservation, was chosen the Best Conservation Information Publication of North America in 1980.

Frequently making the woods her classroom, Jan has been camping for years. She was a Girl Scout leader, has horsepacked into both Colorado and Wyoming mountain ranges, has floated down many of Missouri's rivers, and has attended the North Carolina Outward Bound School and New Hampshire's Project Adventure workshops. She is a certified leader in the St. Louis area for initiative ropes courses, climbing and rappelling, and caving activities.

Jan received a bachelor of science degree in education from the Kansas State College of Pittsburg and an MAT in science from Webster College. She and her husband Abe, and daughters Sheli and Janette, are avid fans of Mother Nature.

How to use this module

This module has been produced for you who teach or work with youth. The material has been written with the classroom teacher in mind, but it also can be adapted by leaders of camps, 4-H clubs, scouting organizations, and other youth groups. A variety of information and activities has been included to make the module useful to as many groups as possible. It may be used individually or combined with other modules for a more extensive course.

The Campground Cookery module contains:

Introductory Information—Questions such as "Why teach this subject?" are answered. Goals and objectives approved by the Missouri Department of Elementary and Secondary Education are established.

Food Safety—This module addresses the subject of food safety and its importance when preparing meals outdoors.

Ethics—The importance of acting responsibly when camping is stressed. Included are tips on preparing and cleaning up a cooking site.

Planning the Trip—This section provides the information necessary to plan meals for a camping trip.

Fire Building—Safety, types of wood and fires, and how to start and put out a fire are included.

Methods of Cooking and Menus—Several methods of cooking and how to make the equipment are especially helpful. The wide selection of menus lets you use the various cooking methods.

Lesson Plans—Field-tested methods of teaching this material are provided in six lesson plans. The time for each lesson is only suggested and will vary with instructors. Equipment and materials needed for the activities are listed.

Student Handouts—Several handouts are included to aid meal and trip planning.

Suggested Written Test—If you are a classroom teacher and want to evaluate your students' mastery of the material you have been teaching, a sample written examination is included along with a suggested practical exam. Test questions are keyed directly to the objectives for the module.

Glossary and Bibliography—These are provided as additional information which may help in teaching the subject in more detail.

Outdoor Skills Education Specialists are assigned to eight regions throughout the state. They will assist you in obtaining materials and scheduling equipment and films that are available from the Department of Conservation. Conservation Education Consultants are assigned to 14 regions and will discuss with you the Department's Conservation Education materials. Check the last page of this module for names, addresses, and regions.

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The material in this module has been reviewed by the following people:

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Please help us evaluate the effectiveness and use of our materials by completing the following questionnaire and mailing it to the Missouri Department of Conservation, Outdoor Skills Education, P.O. Box 180, Jefferson City, MO 65102.

How did you obtain a copy of this module? _____

Have you used this material? Why or Why not? _____

Your position _____

Age group you teach _____

CONTENT AND FORMAT

Were you given enough information to teach this course?

Enough_____ Not Enough_____ Too Much_____

Comments:_____

_____

Was material presented in a manner easy for you to use?

Yes_____ No_____

Comments:_____

_____

What information would you add or subtract? _____

_____

LESSON PLANS AND ACTIVITIES

Did you use the lesson plans?

All of them_____ Some of them_____ None of them_____

Were the time periods allowed for activities adequate?

Adequate_____ Too much time_____ Not enough time_____

Comments:_____

_____

_____

Which activities did students most enjoy? _____

What additional activities would you include? _____

What suggestions do you have for future modules? _____

What topics would you like to see covered? _____

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Topic Outline

Introduction

I. Goal of module
II. Purpose
III. Content
IV. Objectives
V. Brief history

Food Safety

Tips for safe food handling

Ethics

Rules for camping

Planning the Trip

I. Meal planning
II. Comparative shopping
III. Avoiding problems
IV. Overnight trips
V. Equipment list
VI. Tips for packing and preparing food

Fire Building

I. Safety
II. Types of wood
    A. Tinder
    B. Kindling
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III. Types of fires
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    C. Indian fire
    D. Log cabin fire
IV. How to start a fire
V. Matchless methods
    A. Magnifying glass
    B. Batteries and steel wool
    C. Flint and steel
    D. Bow and drill (fire by friction)
VI. How to put out a fire
VII. Cooking with other than wood

Methods of Cooking

I. Dutch oven
II. Reflector oven
III. Tin can stove w/buddy burner
IV. Skewer or stick
V. Spit
VI. Pit
VII. No. 10 tin cans
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Campground Cookery

I. Planning menus
II. Base camp menu choices
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    2. Lunch
    3. Supper

4. Desserts

III. Sample five-day menu plan

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   - E. Sweets

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Introduction

Goal of the module

To increase one's enjoyment of the outdoors, camping, and cooking over a campfire by being able to plan and prepare meals using a wide variety of foods and equipment; and to develop responsible camping ethics.

Purpose of the module

This module is designed to help instructors lead a group cooking experience at a base camp. School experiences focused on cooking and fire building also can be incorporated into an afternoon at a nearby park or even on the school grounds. This module assumes that some bulky cooking equipment and heavy or refrigerated foods can be transported to the site.

The *Backpack Cookery* module, which suggests meals that are lightweight and easy to prepare, may be used to supplement these materials.

A camping trip may not center on cooking, but planning and preparing meals will be one essential part of the adventure. Camp cookery also allows many boys and girls to cook who do not get such an opportunity at home. Planning menus, building fires, preparing food, and delegating clean-up responsibilities can be positive experiences and build confidence in students. Learning to leave campsites cleaner than you find them is an important challenge for all ages.

Content

This module provides information on planning a camping trip, building fires, constructing and using outdoor cooking equipment, and positive camping ethics.

An extensive section of suggested recipes, geared for groups of 12, is included. The appendix contains Menu Suggestion Sheets, Menu Planning Sheets, Comparative Shopping Sheets, First-Aid Situations, and six lesson plans.

Objectives

At the completion of the instruction, students should be able to do the following:

1. List at least five rules of camping ethics.
2. Build a fire in four different ways and know which is needed for specific cookery.
3. Build a reflector oven.
4. Make a buddy burner.
5. Plan a meal for 12 persons.
6. Prepare a meal for 12 persons.
7. Use at least three different cooking methods.
8. List the Basic Four food groups and two foods in each group.
9. Designate the number of servings that should be eaten daily from each food group.

Brief history

Scouts helped make camping and outdoor cooking more popular.

Eating has a long and honorable record. While no source indicates an exact timetable, life has inhabited this earth for approximately 2½ billion years.

Long after the beginning of life, fire made its imprint upon the human diet. It provided warmth, light, and a total change from the raw dining fare. Evidence of man-made fires dates back some 750,000 years in France. But despite the improved taste when game was tossed on embers, the world was slow to become sophisticated about menus. Only 12,000 years ago, man's cooking was still done only over an open fire.

At a period when neither camping nor outdoor cooking was fashionable, scouts began putting together menus and cookbooks. Early scouting trips featured one-pot meals; great importance was placed on fire-building skills. Later, meals became more complex, and the majority of the camping day began to center around fire-building techniques and food preparation.

Today's camping experiences are diverse. The range of menus spans from elaborate, elegant meals to simple wilderness fare.

Food Safety

Editor's Note: For more information on food safety, consult your local University of Missouri Extension Center. Some of the information here is adapted from their publications.

Keeping food safe to eat is particularly important when cooking outdoors. Lack of sanitation, insufficient cooking, and improper storage can allow bacteria in food to increase to dangerous levels.

When refrigeration is not available, it's important to carry foods that remain safe at warm temperatures. Bacteria live and grow at temperatures between 45°F (7°C) and 140°F (60°C).

Protein furnishes food for bacteria to grow; therefore, it should be selected carefully. The most perishable foods are those containing meat, poultry, seafood, eggs, or milk. Protein foods such as peanut butter and cheese are usually safe to carry because of low moisture content. Likewise, other protein sources such as powdered milk or freeze-dried foods are good, but a safe water supply is necessary in order to use them.

Raw fruits and vegetables are safe foods. Harmful bacteria do not grow well in fruits because of their high sugar content and little or no protein. Dried fruits, such as raisins, are good to carry because their high sugar concentration and low water content prevent bacteria from growing.

Mayonnaise is often listed as an unsafe food. While mayonnaise itself is not normally a cause of food poisoning, it is often mixed with high protein foods in which bacteria will grow.

Food for a camping trip should be carefully selected and stored properly. Some foods, such as canned meats or mayonnaise, can be carried unopened and used if eaten immediately after opening. Any of these leftovers should not be eaten if they are not refrigerated and the temperature is above 40°F (4°C). Even when winter camping, do not allow perishable food to sit in the sun.

If you are not backpacking, you may be able to take along a cooler. Coolers can be purchased in a variety of sizes, or you can make a homemade cooler with two cardboard boxes. Line the larger box with about one-half inch thickness of newspaper to help keep out heat. Place the smaller carton inside the newspaper. Pack with chilled food and frozen blue ice, ice cubes, or a milk carton of frozen ice. Carefully cover the box. Check your ice, especially if you are out overnight or for several days, and make sure your temperature stays below 40°F (4°C).

Hygiene is important on a camping trip. Make sure you have a water source for washing hands. Stress to your students that they should use soap and always wash their hands before handling any food.

Refrigeration Needed
eggs
fluid milk
meat
chicken
fish
salads, desserts, casseroles or custards containing these foods

Refrigeration Not Needed
cheese
peanut butter
raw fruits and vegetables
breads and cereals
powdered milk
dried foods
canned foods
freeze-dried foods

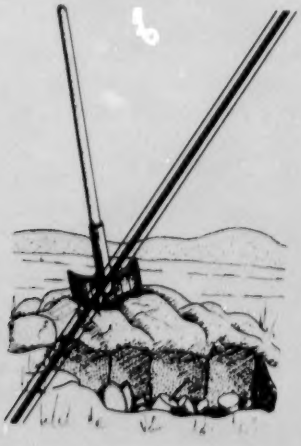
Ethics

At one time, camping meant drinking from streams and lakes, building a large fire at camp, and digging a hole to bury garbage and trash. Those days are gone, and the rules for ethical conduct have changed.

Responsible wilderness camping today means leaving the area in a natural state, avoiding fire scars, and packing out everything you brought to the campsite. Campers should use established fire pits, when available, and should avoid washing or rinsing in waterways.

Rules for camping

The heat from gas lanterns can damage and scar trees.



Do not bury garbage.

1. Pick an area to camp where you will do the least amount of damage to the environment. Don't build improvements to the campsite—leave it in a natural state.

2. Camp away from streams and springs.

3. Do not cut trees, limbs, or brush, and do not trench tents. Hang or set your lantern where it will not damage trees or vegetation. Do not hammer nails into trees.

4. Use a gas stove whenever possible, to conserve firewood. If you build a fire, keep it small and use only fallen timber for firewood. Rather than using a ring of rocks, gently dig up the topsoil and make a shallow pit for the fire; then when finished, put out the fire, scatter the wood, and replace the topsoil.

5. Dispose of trash by rinsing out cans and bottles and putting them in trash barrels, where available. In wilderness areas, carry out all trash and garbage, including cigarette butts, fruit peelings, and gum wrappers. Do not bury garbage.

6. Do not bathe or wash in streams or springs. Carry water back to your campsite, use biodegradeable soap, and pour out the dirty water away from the stream or lake.

7. Bury human waste by digging a hole 6 to 8 inches deep at least 100 feet from water, campsites, or trails.

8. Be considerate of others by keeping noise to a minimum and staying in your own area as much as possible.

9. Park your vehicle in designated spots and be careful not to drive it where you will damage land, trees, or crops.

10. Keep the size of your group small (12 or under) and do not stay so long in one place that the area becomes damaged.

11. Do not carve or write on, or otherwise deface, anything.

12. If you camp or hike on private property, first obtain permission.

Do not carve on trees or deface anything.

Campers should burn all paper items and place non-burnable trash, including plastic, peelings, eggshells, and foil, in the garbage cans provided at many sites. Otherwise, the items should be bagged and taken home or to a nearby dumpster for disposal. When possible, rinse out cans and containers to avoid attracting flies.

The modern camping ethic is to leave the campsite cleaner than you found it. This is especially important with the growing number of campers nationwide.

Planning the Trip

Meal planning, purchasing, and preparation are jobs which can be shared by all participants before and during camp. Total group involvement is most likely to occur when everyone is given real responsibility for the camping experience.

Meal planning

Begin the meal-planning session with a study of the basic four food groups. (A handout is included in the appendix.) Then divide the class into groups to make selections from a menu suggestion sheet. Use the entire list of Campground Menu Choices from the appendix, or make a limited version which considers the activities, costs, or objectives planned for the trip. Check their menus to make sure they have planned well-rounded meals using all four food groups.

Have students share their meal ideas before the food is purchased. This should reveal some important information from the group, such as vegetarian tastes or food allergies.

Assign the same small groups to make grocery lists for the meals they have planned. Later, as the leader, you can carefully review the lists to avoid duplicate buying, over- or under-buying, and to include items that are often overlooked, such as butter, salt, pepper, oil, spices, matches, and plastic storage bags.

Comparative shopping

Depending on class time, an exercise in comparative shopping may be desirable. The small groups, each with a Shopper's Guide Sheet (see Appendix 4), should visit several different kinds of stores to compare prices.

After careful comparison, the store that can supply the items needed at the best price should become the next day's purchase site. The same small groups can buy the food they need, or one group can be selected as buyers for the entire class.

Class members also should organize and pack equipment needed for the trip, as well as mix or bake any food items that can be prepared ahead of time. If stoves are to be used, they should be test-lit and readied for the trip. Everyone should be taught to light the stove and to care for it properly, and they should be reminded of the inherent dangers of fuel and flame. First-aid supplies should accompany every trip. Allowing students to inventory the first-aid supplies acquaints them with what is there and assures the leader that nothing has been forgotten.

Avoiding problems

Some of the most frustrating moments of a camping trip can occur before and after meals, unless thought has gone into planning those times. Mealtimes can be positive, group-building experiences only when each member has clear expectations regarding cooking needs, clean-up responsibilities, and free time. Problems arise when members feel an injustice exists regarding work duties. A rotating system that allows for each meal to have some cooks, some cleaners, and some loafers works well. Encouraging the class members themselves to divide up the duties ahead of time is the best approach.

Overnight trips

Overnight field trips that focus on cooking and enjoying the outdoors need careful planning. Scheduling the trip, arranging for transportation, and obtaining parental permissions take extra planning and energy from the leader.

Information about public campgrounds can be obtained from national, state, and local agencies. Write the Missouri Division of Tourism, 308 E. High St., Jefferson City, MO 65101; the Missouri Department of Natural Resources, 1915 Southridge Drive, Jefferson City, MO 65101, and the Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102.

Afternoon outings are a good alternative for establishing positive outdoor experiences. These outings may be as simple as going outside in the school yard, walking to the nearest park, or driving to a wooded area.

Equipment list

Grill
Two-burner stove
Heavy frying skillets
Dutch oven
Reflector oven
Skewers (square)
1 unbreakable bowl for each person
1 insulated cup for each person
1 spoon or fork for each person
Cutting knives and table knives
Large wooden cooking spoons
Can opener

Pancake turner
Coffee pot
Ice chest
Mixing bowls or No. 10 tin cans
Gallon milk containers with lids (to make and shake juice)
Small cake pan
Cookie sheets
Dishpan
Washcloth
Biodegradable detergent
Matches
Bandana or heavy asbestos gloves
Scouring pads
Hand-washing unit (gallon jug with stoppered hole)
Spices in labeled, unbreakable shakers
Charcoal briquets
Garbage bags and plastic bags to mix food in
First-aid kit

Tips for packing and preparing food

Fill plastic bottles (that have been washed out and allowed to dry for a week) with sugar, instant dried milk, and other staples. Label each.

Mark a plastic quart-sized water bottle with cup-level markings to provide a measuring cup at camp. Be sure your water bottle is durable and does not leak.

Good plastic bags can be invaluable. They serve as salad bowls for lettuce, cabbage, or vegetables. They hold biscuit mix and water while you knead the outside of the bag. They isolate wet shoes and clothing and store dirty pans and utensils to be carried home.

Remember that at high altitudes, water takes longer to boil. You should allow one-third more cooking time.

To make it easier to remove the blackness of the campfire from skillets and pots, coat them with a small amount of liquid detergent or rub each with a bar of soap before you put them on the fire. Scrubbing shouldn't be necessary.

Here are some hints for camp:

1. Use a can for a rolling pin, a cookie sheet for a cutting board, and marked scoops and water bottles for measuring utensils.

2. To avoid water-soaked foods, freeze ice for the cooler in gallon milk jugs. As the ice melts, the water can be used for drinking. Another way to keep items in the cooler from floating is to use a purchased, pre-frozen pack. These packs, however, do not last as long as the frozen gallon jugs.

3. Make a hand-washing unit from a gallon plastic milk jug or large plastic bleach bottle. Fill with water and replace the lid. Puncture a small hole near the bottom of the front

Water bottle marked with measurements.

Hand-washing jug

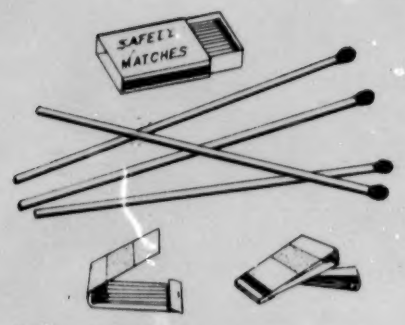
of the jug. When the jug's lid is removed and the hole is unplugged, air pressure will force a stream of water to flow from the hole. Place a bar of soap inside a nylon stocking and tie it to the handle of the jug. A rope also can be attached to the handle so you can hang the unit from a tree branch. Label or decorate the jug so it isn't confused with drinking water. This also makes a simple shower for washing hair and bathing.

Fire Building

Building a fire is an exciting part of camping and a skill worth learning.

Established campgrounds generally provide a cooking pit or a grill area for fire building. The ground cooking pits allow greater flexibility for cooking methods and fire uses.

Safety



Types of matches

Fire safety means avoiding injury to individuals and to the environment. Practice safety skills with your students.

Frequent fire injuries occur from striking matches, being burned by hot coals, stepping or falling into fire pits, or spilling hot liquids or foods.

Teach students to strike matches away from their bodies. Wooden matches are easier to light than paperbook matches. Long, wooden fireplace matches are safest.

As an instructor, establish firm rules about activity around fires. Horseplay around a fire is out of place. Playing with skewers or sticks used in group cooking also is a potential hazard. Hot skewers are dangerous. Don't leave them where someone might step on, sit on, or accidentally touch one of them.

Carefully remove the sod and set it aside.

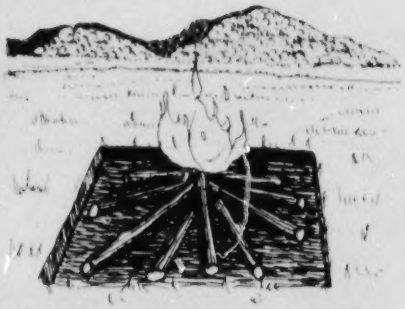
PREVENTING UNWANTED FIRES

The fire builder should avoid fires under branches or near dead weeds, leaves, or grass. Spreading sparks could easily cause a large area fire.

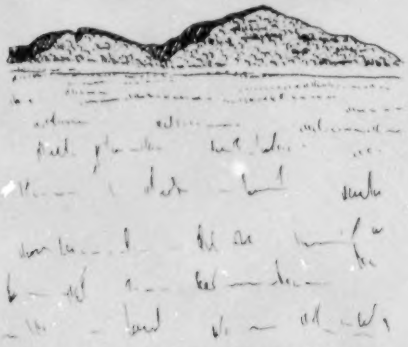
Fires built over tree roots may sometimes burn back into the tree or bush, also creating a hazard. Never build a fire against heavy roots, fallen logs, standing trees, or driftwood. A fire built within 15 feet of trees or underbrush, including overhanging greenery, may not start a fire, but can scorch or permanently damage the plants.

Circling a fire area with rocks may provide a shield to contain the flames, but it can scar the rocks. Also, many of Missouri's rocks contain moisture and may explode when heated.

If an established fire pit is not available, build your own. First clear the area of all dry grass, brush, and surface



Build a small fire—do not use rocks.



Scatter ashes and replace the sod.

litter. Remove sod in the fire area and set it aside. To keep the sod alive and green, water and cover it. Build only a small fire; food cooks best on hot coals, so large fires are not needed.

Never leave a fire unattended, and be ready to put out the flame, if needed. Keep a bucket of water or dirt nearby in case of emergency. Remember that windblown sparks can travel 100 feet or more. Be extremely careful on windy days.

When you are ready to extinguish the fire, douse it with water. Keep mixing water with the unburnt fuel, charcoal, and ashes until all steaming and sizzling stops. When the fire area is cold to touch, grind the dirt and ash together, scatter it around the area or turn it under, replace the sod, and redistribute the dead leaves and ground litter that were cleared originally. These steps help to eliminate the ground scar and leave the site with little damage to the environment.

FIRST AID

The initial treatment for a burn is to cover it with ice or cold water, then wrap in a clean cloth.

Persons with serious burns should be taken to a doctor. Avoid putting lotion, first-aid cream, or ointment on a burn. The doctor may have to remove it.

Types of wood

Tinder

Fuzz stick

To build a successful fire, three sizes of wood are needed.

TINDER

Tinder consists of wood shavings, pine cones, or tiny twigs, that catch fire easily.

Collect these pencil-sized or smaller twigs without damaging the environment. Bark peelings and twigs should be taken from fallen or dead trees, rather than living ones. When the ground is wet, break off dead twigs from the lower branches of trees. The dead wood should make a snapping sound when broken. Avoid collecting rotted, punk wood.

A fuzz stick is a good tinder starter. Make a fuzz stick by whittling a small stick so shavings stick out around the core of the stick. This pine cone-looking stick will catch fire easily.

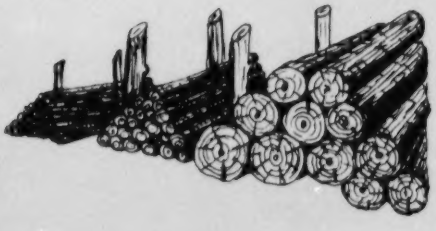
KINDLING

Kindling, or twigs about the size of the thumb, is added to get the fire established.

FUEL

Fuel is larger wood that will maintain a fire.

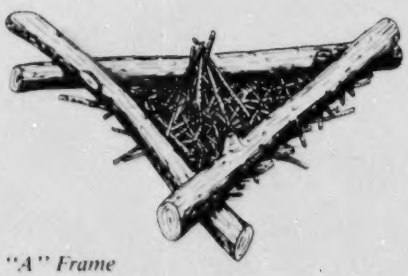
Before building a fire, gather a wood pile that will be sufficient for the cooking or entertaining. It usually takes more wood than anticipated. Stack the firewood according



to category—tinder, kindling, and fuel. These arrangements will make fire building and tending an easier job.

Types of fires

The foundation or base for any fire is an "A" frame. This is constructed by forming a triangle with three, overlapping, medium-sized sticks. Two of the sticks should form a "V" on the ground and the third stick should rest on top of the other two sticks, closing the open end of the "V".

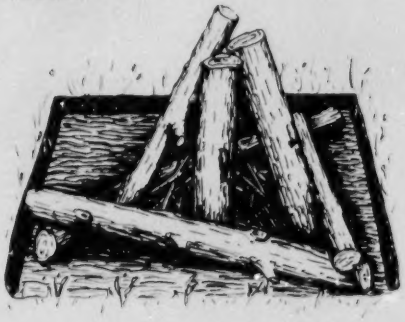


"A" Frame

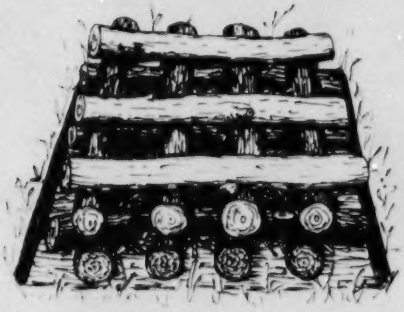
Place tinder carefully against the front, elevated stick and light. After a flame is established, add more tinder and kindling.

There are at least four basic shapes for fires. These shapes are formed when the larger wood, or fuel, is added.

1. A *tepee fire* is the basic starter fire. It produces hot, quick flames good for reflector oven cooking and for one-pot meals.



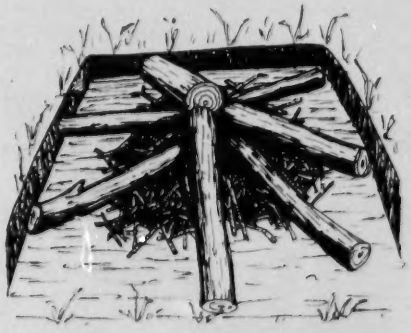
Tepee fire



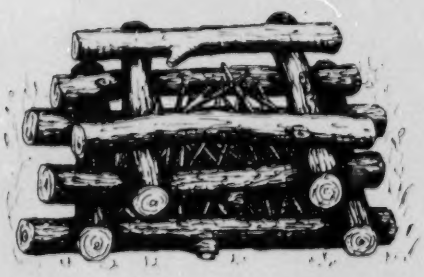
Crisscross fire

2. A *crisscross fire* produces a deep bed of coals good for Dutch oven cooking, foil cooking, and grill cooking.

3. An *Indian fire* concentrates heat in the center and is good for one-pot meals. To keep the fire small, the fuel must be moved in as it burns.



Indian fire



Lob cabin fire

4. A *log cabin fire* produces a good bed of coals for an excellent campfire, or it can be used for the same cooking jobs as the crisscross fire.

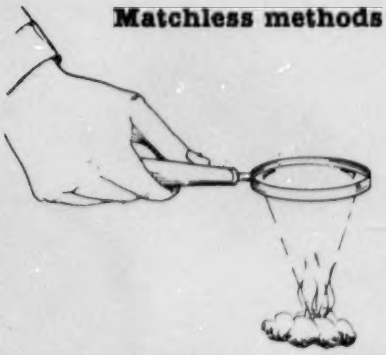
How to start a fire

Clear the area and have stacks of wood ready before you begin. Build your fire at a site away from overhanging shrubs and trees. Decide on the type of fire needed, then loosely stack the tinder onto the base of the fire frame. When starting a fire, keep the wind to your back and let your body act as a shield. If the fire doesn't catch after three tries, rebuild the base and check or revise the dry tinder.

For difficult-to-start fires, try using a fuzz stick. (See "Types of Wood.") A lighted piece of wax candle is a good fire starter for wet wood.

Matchless methods

You can further challenge students by introducing matchless methods of fire building: 1) magnifying glass, 2) batteries and steel wool, 3) flint and steel, and 4) a bow and drill (fire by friction).



Using a magnifying glass

MAGNIFYING GLASS

A magnifying glass, catching the sun's rays and directed at dry tinder or leaves, can start a fire. The intense heat will cause the tinder to start smoking and eventually to burst into flames. To encourage the flame, the fire builder can gently blow on the smoking tinder.

Batteries and steel wool

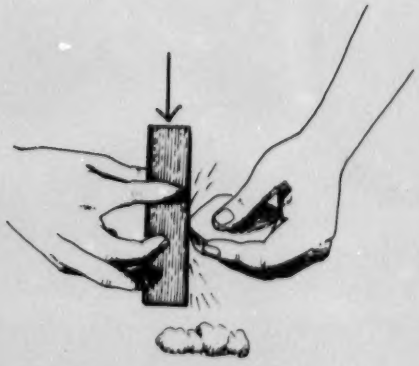
BATTERIES AND STEEL WOOL

The easiest matchless fire is made with two flashlight batteries and a piece of fine-mesh steel wool.

Place the batteries, one on top of the other, in your hand. Stretch a small piece of steel wool from the underside of the bottom battery to the top of the upper battery. Using your little finger or a stick, firmly anchor the steel wool on the bottom battery. Rub the steel wool across the top of the top battery. When the steel wool sparks, place it on your tinder and blow gently.

FLINT AND STEEL

To produce a fire by flint and steel as the pioneers and mountain men did, you first need to prepare some charred cloth (or you can use cotton balls or steel wool). To char cloth, take an old metal container with a lid and punch a hole the size of a nail in the top. Cut strips of 100 percent cotton cloth and fill the can. Set the can on your stove and let it smoke. When the smoke stops coming out of the nail hole, remove the can from the stove and allow it to cool. The cloth inside should be well charred. If not, return to the stove for more charring.



Flint and steel

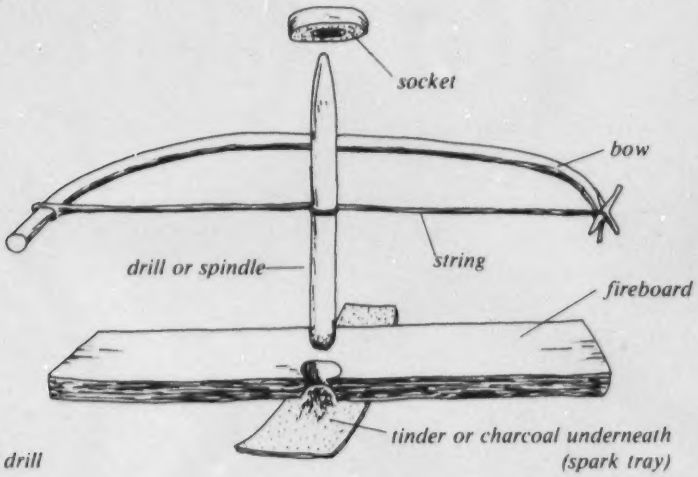
Using a hard, carbonized steel striker (an old file is excellent or your pocket knife will do if it is steel, although the process will scar it up some) and a sharpened piece of flint, strike the flint downward toward the charred cloth, cotton ball, or steel wood. When a spark falls on the material, pick it up, place it in the nest of dry tinder and, holding it at eye level, blow gently. Don't be discouraged if you fail to produce a fire the first time. Keep trying!

BOW AND DRILL (FIRE BY FRICTION)

The ultimate test in fire building is to produce a fire using a bow and drill. This method was employed by the Indians and adopted by mountain men in the early frontier days.

You can purchase a kit for making a bow and drill from Boy Scout supply stores and some craft shops, or you can make your own.

There are six parts to the bow and drill: the bow, a string, a fireboard, a drill (or spindle), a spark tray, and a socket.



Bow and drill

In making your own bow, use a green, limber stick about 18 inches long and ½ inch around. A piece of leather thong, nylon cord, or shoestring can serve for the string.

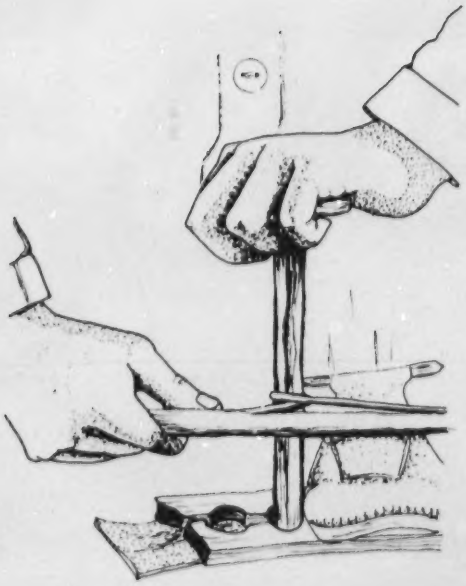
The fireboard and spindle should be made of a cured softwood. (Cottonwood, willow, pine, and cedar are all good choices.) The spindle should be at least 6 inches long and ¾ inch around. The fireboard may be from 12 inches to 18 inches long and about ½ inch thick.

Cut a notch into the side of the fireboard. The top side of the notch should be just split; the underside should flare out, allowing hot ash to drop onto a spark tray. The spark tray can be a piece of bark, a leaf, charred cloth, a cotton ball, or steel wool placed under the notch in the fireboard.

The socket is a cuplike device to fit the spindle, or drill. Stone, antler, shell, bone, or hardwood are good materials for making a socket. When the socket is made of hardwood, the inside must be well-lubricated.

To make a fire using the bow and drill, align your body to exert a firm pressure on the spindle before you begin the sawing action. A line of pressure with your chest directly over the socket and applying straight pressure onto the spindle is necessary. This pressure will force the spindle to remain straight.

To keep the spindle from wobbling, lock the wrist holding the socket by wrapping that arm around the support



A bow and drill creates fire by friction. The drill and fireboard should be the same wood.

leg. Move the bow back and forth in a sawing action. Start the movement slowly, gradually increasing both the length and speed of the stroke. Continue the stroke until smoke is rising freely.

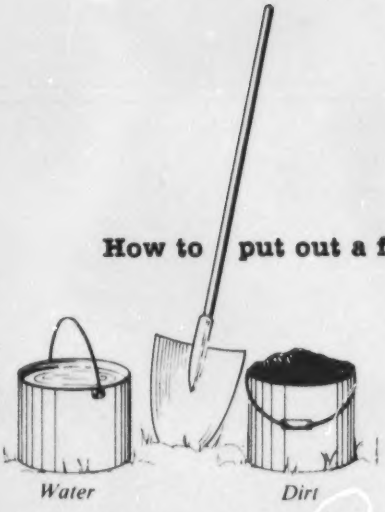
Once you think you have a spark, give a few additional power strokes. Carefully brush the ashes or sparks from the fireboard onto the spark tray and drop everything onto the dry tinder nest. Blow until a flame appears. Again, the first attempt may not produce a fire. Keep trying!

When students become proficient at building fires, give them greater challenges. Try assigning the following:

1. Build a fire with two matches.
2. Build a fire to boil one quart of water.
3. Build a fire with one match.
4. Build a fire with wet wood.

Here's another good test for fire builders. After students have established their fires, announce the presence of a thunderstorm. Pour a half-gallon of water on each fire and ask students to remake them.

How to put out a fire



Never simply bury a fire. That puts out flame, but it makes live coals burn longer and hotter.

Learning to extinguish fires is just as important as learning to build them.

Keep a bucket of water or dirt near the fire to quench an unwanted flame. The water can also be used to wet towels or sacks, which are effective outdoor fire extinguishers. A fire that starts to creep away from the fire pit, however, usually can be simply stamped out.

To break up a cooking fire, spread out the coals with a stick and sprinkle with water or dirt. Allow the ground to become cool to the touch before replacing the sod and ground covering.

Cooking with other than wood

Paraffin

Briquets

Wood is the ideal fuel, but other heating methods often are necessary. Some of these methods include the following:

1. *Canned heat or commercial hot tablets.* These purchased items are good for heating canned foods. Place the canned heat or a lighted tablet inside a tin can stove with vent holes punctured around the top. Set the can of food to be warmed directly on top of the stove.

2. *Paraffin.* This type of fuel, used in a buddy burner or tin can stove, can heat or fry food.

3. *Briquets.* These pieces of commercially prepared fuel are the best for Dutch oven cooking. They also provide good cooking conditions for foil packets, spits, stick cookery, and grilling meat.

Some persons prefer to transport actual stoves to campsites. Camping stoves come in many models. Compare sizes and styles in a sporting goods store.

Lightweight backpack stoves also may be used at the base camp. They are light and compact, but are less stable than the heavier base camp models.

Methods of Cooking

Dutch oven

The best type of Dutch oven for campfire cooking

This heavy cast iron or aluminum pot, known as a Dutch oven, is a versatile piece of camp cooking equipment. It can be used for boiling or simmering one-pot meals, as a frying skillet, a deep fat fryer, or as an oven for roasting or baking. The outdoor Dutch oven has three legs to keep the bottom of the pot off the coals and to allow air to circulate. It should have a recessed lid rather than a rounded one.

Chili, American Spaghetti, and Grand Round Stew (recipes found in One-Pot Meals section) lend themselves to Dutch oven simmering over a campfire or on a camp stove. Any one-pot meal can be prepared in the Dutch oven.

Doughnuts, fried pies, fried potatoes, and hush puppies, all made by deep-fat frying, can be prepared in a Dutch oven.

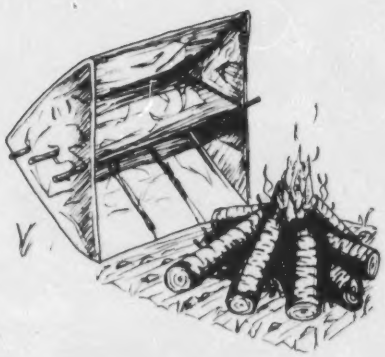
For oven cooking, prepare the item to be baked, place it inside the Dutch oven, and replace the lid. Place the Dutch oven over coals and cover the lid with coals. If the item to be baked requires a long cooking time, keep fresh, hot coals on the lid.

Dutch oven cobbler (recipe in Desserts) is delicious. Cakes, pies, corn bread, biscuits, and muffins also can be prepared in the Dutch oven. The time required for baking is about the same as recommended for your home oven.

To simplify cleanup, line the Dutch oven with foil, shiny side up. The foil also aids the baking process.

The Dutch oven uses heat more efficiently than other camping vessels and cooks a wide range of menus. The oven is heavy, however, and sometimes difficult to clean.

Reflector oven



The reflector oven will bake many of the same things outdoors that your oven at home does indoors. Hot breads, desserts, and pizza are probably the foods most frequently attempted. The reflector oven is lightweight; a commercial variety folds up compactly and it provides baked goods outdoors. One disadvantage of the reflector oven is that it requires building a large fire and burning a lot of wood. The best type of fire for this method of cooking is a tepee fire.

Your favorite home recipes for corn bread, muffins, biscuits, gingerbread, brownies, or cakes will work in this oven. Commercial ready-mix packages also can be used by following package directions.

Making a reflector oven

HOW TO MAKE A REFLECTOR OVEN

Reflector oven cooking is fun when you have time. Make your own oven at home or school before the camping trip.

Equipment needed

Corrugated cardboard box
Heavy-duty aluminum foil
Clothes hangers
Wire cutters
Ruler
Punch or ice pick
Mat knife or razor blade knife

1. Take a corrugated cardboard box, approximately 12 x 18 x 12 inches. Cut off the top and wrap that entire section in aluminum foil. Cover the inside of the box with foil—shiny side out to reflect the heat.

2. Puncture holes for coat hanger wire to serve as a shelf. To ensure a level shelf, measure carefully the distances of the punctures from the top of the box. Cover the shelf with foil.

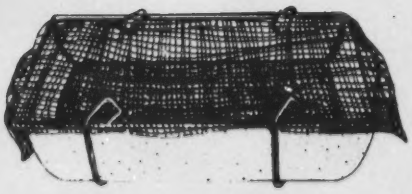
3. Place the foil-wrapped top slanting upward in the back to direct the heat toward the shelf.

4. Build a tall fire at the opening or place hot briquets in a screen-covered pan and tip the pan up in front of the oven. This may be used to supply the oven's heat if you don't want to build a fire. Place the pan on bricks or another insulator.

HOW TO MAKE A CHARCOAL ELEMENT FOR A REFLECTOR OVEN

Equipment needed

Old cake pan, 9 x 13 x 2 inches
Pine mesh screen 11 x 15 inches
Wire
Wire cutters
Clothes hanger and pliers



Charcoal element for a reflector oven

1. Cut the screen wire to a size that will overlap the cake pan opening by at least 1 inch on all sides.

2. Fold the corners of the screen and wire together.

3. Fasten the screen to the pan with binder clips or make clamps (the depth of the pan) from a clothes hanger, as shown.

4. Place the pan in front of a reflector oven and prop it up with a rock or log.

5. When the cake pan is filled with charcoal briquets, it can provide heat in fireless areas.

Tin can stove with buddy burner

Tin can stove

Safety Tip:
Be especially careful not to cut hands when working with cans that have rough, cut edges.

A tin can stove is an inexpensive, lightweight stove that can be used for frying, boiling, and some baking.

Two people can work together with this stove. One person can cook while the other feeds the fire, then they can trade places. A small wood fire inside the can or a buddy burner can be used as fuel. When the stove is hot, you are ready to begin cooking.

A breakfast of bacon, eggs, and toast is excellent on this stove. French toast and pancakes also are easy to fix. The tin can stove can be used to boil water for drinking, making soup, or cleaning up.

This stove is designed to cook food for one or two persons, not a group. The heating element, the top of the can, burns food easily and often causes it to stick. Also be careful not to cut your hands on the rough edges of the tin can.

HOW TO MAKE A TIN CAN STOVE

Equipment needed

No. 10 tin cans
Tin snips
Punch-type can opener

1. Cut out one end of the No. 10 tin can.

2. Cut an opening 3 x 4 inches from the cut end of the can, making a door for the fuel. Avoid a cut more than 3 inches wide, or the can stove will lose base support and may topple with a pan on top.

3. Slide cut-out lid into the can so it rests against the closed end, making a double thickness.

4. To hold it in place, punch several vent holes around the top of the stove (the closed end of the can). These punched holes will hold the extra lid in place. The double thickness will help conduct the heat.

HOW TO MAKE A BUDDY BURNER

Equipment needed

Tuna can and removed lid
Corrugated cardboard
Wax
Double boiler
Stove
String—about 3 inches long

1. Cut corrugated cardboard crosswise into strips that are the height of the tuna can (1 3/8 inches). Roll the strips and place them inside the tuna can.

2. Melt wax carefully in a double boiler. Wax is flammable. Do not let it get too hot.

3. Coat the string with wax and place one end among the strips of cardboard.

Buddy burner

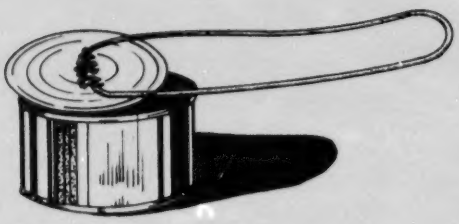
4. Pour the wax over and into the corrugated strips, fully soaking and filling the cardboard and can. The cardboard is the actual wick, but the inserted string will be easier to start. The wax works as a candle. To replenish the burner, refill with wax.

5. To use your buddy burner, slide it through the door of your tin can stove. You can expect approximately 1½ hours of burning time from one burner. Dian Thomas, author of *Roughing it Easy,* suggests that a square of wax be placed on top of the burner to extend the heating periods. As it burns, this wax refills the burner.

HOW TO MAKE A BUDDY BURNER DAMPER

Equipment needed

Clothes hanger with rolled cardboard around the bottom
Tuna can lid
Wire
Wire cutters
Punch or ice pick



Buddy burner with damper

1. Punch four holes in the lid—two holes on either side of the center diameter line. The two holes closest together should be ½ inch apart.

2. Separate a coat hanger and bend the sides together. Wire the handle to the lid by inserting each end of the hanger through one hole in the lid and up through the other hole. Twist the end of the hanger back around the wire to fasten.

3. Bend down the end of the handle at a 90-degree angle to support the damper when it is in use.

4. Use the damper to regulate heat by smothering part of the burning fuel. The damper can be pulled forward and backward over the flame.

Skewer or stick

Skewer or stick cooking is used primarily to broil bread and meat or to cook shish kabobs, an arrangement of fruits, vegetables, and meats on a stick.

The method is fast and serves one or two individuals per stick. Campers simply hold the sticks over the coals and turn the food items until they are done. Square skewers work best because the food doesn't slide around; however, you can make inexpensive skewers from coat hangers that will work if the wire is doubled.

Homemade skewer

HOW TO MAKE A SKEWER

Equipment needed

Clothes hangers

Wire cutters

1. Untwist and straighten the clothes hangers. Use the wire cutters to cut off the heavy twisted areas near the ends.

2. Bend the wire in half.

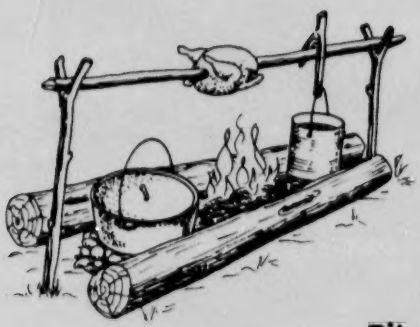
3. Push food onto both wires (this keeps food from sliding around).

4. If wire gets hot, use bandana or potholder to hold it.

Spit

Use a spit to apply the stick method of cooking to larger pieces of meat. Chickens or piglets are good meats for spit cookery.

A spit can be made from two Y-shaped sticks poked into the ground. A green stick, made to pierce through the meat, rests inside the forks of the Y-shaped sticks. Or, you can use large rocks to support the green stick. In either method, the green stick should be about two feet above the hot coals.



For a more elaborate spit, make a metal frame, complete with a hand or motorized crank attached to the crosspiece to turn the roasting meat.

Spit cooking may take up to several hours, but it can be used to prepare large amounts of food.

Pit

Pit cooking is a novel way to prepare one-pot dishes or large meats, such as whole turkeys, hams, or roasts.

This cooking method involves digging a pit two or three times larger than a Dutch oven or large enough to hold the total amount of foil-wrapped food for a meal.

Line the pit with flat igneous rocks. Do not use rocks found near streams since they may contain moisture and explode in a fire.

Build a blazing crisscross fire inside the pit to produce many coals. It will take an hour or more to heat the rocks and fill the pit with coals and ash.

To prepare the food, wrap in several layers of aluminum foil, or layer the food between wet leaves. Remove the hot coals from the center of the pit and place foil-wrapped food in the pit. Completely cover with coals. Each packet needs to be separate and surrounded with hot coals. Place slower cooking items nearer the bottom.

Top the entire meal with a wet gunny sack, and cover the sack with four to six inches of dirt. If you don't use a gunny sack, pour water directly onto the top layer of dirt. This moisture creates the steam which cooks the meal.

Allow the food to cook 3½ hours for a chicken-sized piece of meat, longer if the meat is larger.

No. 10 tin cans

An inexpensive camp pot is a No. 10 tin can that can be easily obtained from restaurants, hospitals, or school cafeterias. These gallon-sized containers can be used to boil water, prepare one-dish meals, or saute items. Any one-pot meal listed in the recipe section can be cooked in this container.

HOW TO MAKE A POT FOR BOILING WATER

Equipment needed

No. 10 tin can
Heavy wire
Punch or ice pick
Wire cutters or pliers

1. Punch a hole on each side of the center diameter line, near the top of the opened end of the can.
2. Place wire in one side and attach by twisting the wire around itself.
3. Decide on the arc of the handle, cut off excess wire, and attach other end in the same way as the first.

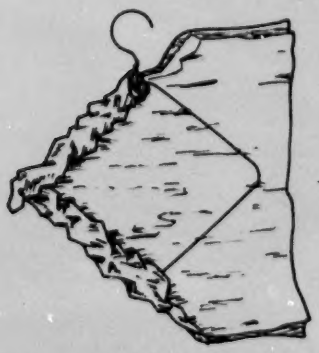
Aluminum foil cookery

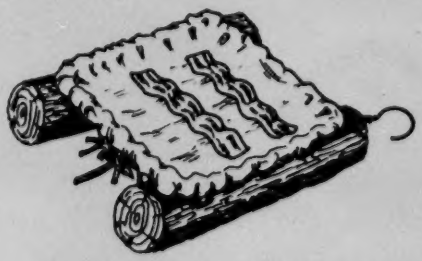
Aluminum foil helps cook food over hot coals. Foil may be wrapped around the item several times, as in pit cooking, or used with a steam seal to cook foods over open coals. All-in-one meals, such as Steamboats, Ham-Sweet Potato-Pineapple Packets, or Eggplant Parmesan can be prepared with foil packets. (See "Meals in Foil" under supper recipes section.)

Aluminum foil also makes handy cooking utensils such as a griddle, saucepan, frying pan, and baking sheet.

HOW TO MAKE A GRIDDLE

1. Pull a coat hanger into a square.
2. Wrap hanger with 2 sheets of heavy aluminum foil, crimping edges to secure.
3. Depress the center slightly to form a well to hold food.
4. Prop griddle on logs over hot embers.



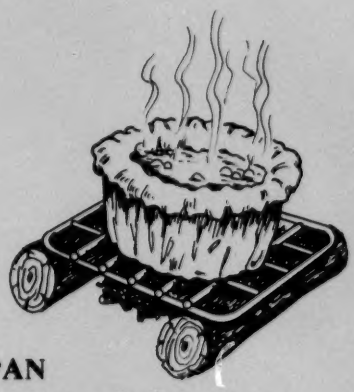


Aluminum foil griddle

Safety Tip:
Use potholders to remove pan from rack.

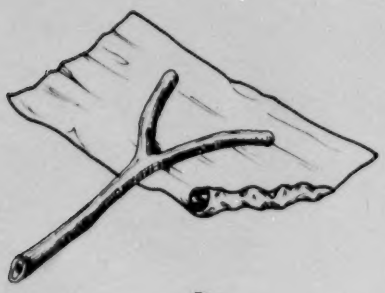
HOW TO MAKE A SAUCEPAN

1. Mold 3 layers of heavy aluminum foil around the end of a log or a round one-gallon container.
2. Remove, crimp down edges to form a tight rim.
3. To use, place on metal rack over hot embers.



Aluminum foil saucepan

Safety Tip:
Use potholders when handling hot griddle.



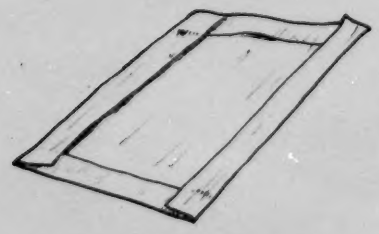
Aluminum foil frying pan

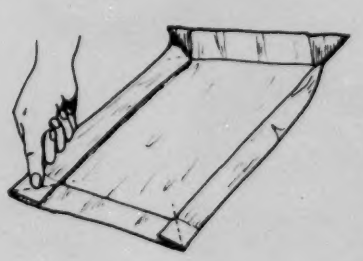
HOW TO MAKE A FRYING PAN

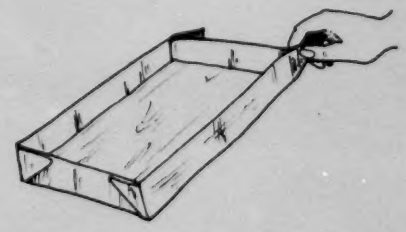
1. Use a forked stick with prongs wide enough to contain food. Center stick on 2 sheets of heavy aluminum foil as shown.
2. Starting at bottom corners, roll foil diagonally toward fork; crimp securely around each side of fork. Roll top edge down.
3. Turn stick over and depress center slightly to form a well to hold food.
4. Roll aluminum foil around neck of pan handle to protect stick from fire.
5. Prop frying pan over hot embers.

HOW TO MAKE A BAKING SHEET

1. Use 2 sheets of heavy aluminum foil 6 inches longer and 6 inches wider than the desired size of pan. Fold in all edges 1½ to 2 inches.
2. Score corners.
3. Fold again forming 1½- to 2-inch sides and miter corners against side of pan.
4. Use 3 sheets to make a pan for cakes, brownies, or cornbread.
5. For added stability, place pan on metal grill before filling with batter.







Aluminum foil baking sheet

Campground Cookery

Planning menus

Bread/cereal group

Nutritionists recommend that you plan your meals around the Daily Food Guide Groups in order to meet the body's daily nutrient needs. Try to include for each day's meals:

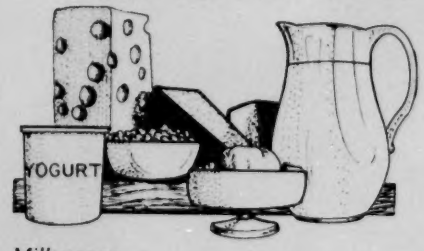
1. **Milk group:** Two to four servings of milk, cheese, ice cream, cottage cheese, yogurt, or other dairy products. (Adults—2 servings; Teens—4 servings; Children—3 servings)

2. **Meat group:** Two or more servings of meat, fish, poultry, cheese, eggs, dry beans, dry peas, nuts, or peanut butter.

3. **Bread-cereal group:** Four or more servings of bread, oatmeal, rice, dry breakfast cereals, cooked cereal, spaghetti, macaroni, or crackers.

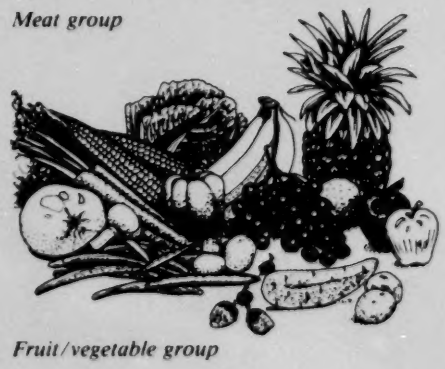
4. **Fruit-vegetable group:** Four or more servings of fruits and vegetables including one dark green or yellow vegetable and one citrus fruit or juice.

Base camp menu choices



Milk group

Meat group



Fruit/vegetable group

Breakfast

Hot cereal

Cold cereal
- with bananas, fresh or canned peaches

Eggs
- Tin Can Breakfast
- Scrambled eggs
- Clam Scramble
- Paper Bag Breakfast
- Omelets
  - Avocado-Bacon
  - Cheesy Shrimp
  - Onion and Pepper
  - Zucchini
  - Mushroom-Tomato
- Calamity
- Pancakes

Sweets
- Toast varieties
- English muffins and jelly
- Cinnamon Brown Bears
- Pineapple Upside-Down Cake
- Doughnuts
- Fried Pies
- Fairy Rings

Fruit
- Apples
- Oranges
- Grapefruits
- Cantaloupes
- Bananas

Lunch

- Luncheon meats
  - Hero Sandwich
  - Submarine Sandwich
  - Grilled Sandwich Supreme
  - Tuna or Salmon Salad
  - Grilled Luncheonwich
  - Sloppy Joes
  - Bacon, Lettuce, and Tomato Sandwiches
- Hard-boiled eggs
- Tomatoes
- Fresh fruit
- Potato chips
- Corn chips
- Pretzels
- Cookies

Supper

- Meals in a Can
  - Beef Stew
  - Chili
  - Spaghetti and Meatballs
  - Ravioli
  - Macaroni with beef
  - Lasagna
  - Chicken and Dumplings
  - Chow mein: chicken, beef, shrimp, beef-pepper, and oriental varieties
- Meals in Foil Packets
  - Steamboats
  - Ham-Sweet Potato-Pineapple packets
  - Chicken-Onion-Potato packets
  - Hot Dog Wraps
  - Eggplant Parmesan
  - Corn on the cob
  - Baked Potatoes
- Barbecued Meals
  - Hamburgers
  - Sirloin steaks
  - Pork steaks
  - Chicken
  - Flank steaks
- Hobo Stick Cookery
  - Hot dogs
  - Breadsticks
    - Bacon twists
    - Cheese-onion
    - Vienna sausage
  - Pig in a poke
  - Drumsticks
  - Kabobs
- One-Pot Meals
  - Fresh Hamburger Stew

- Grand Round Steak Stew
- Meatballs Stroganoff
- Macaroni and Cheese Chili
- American Spaghetti
- Quick Spaghetti
- Chili
- Tacos
- Tuna Special

Novelty meals
- Stone soup
- Orange Shell Gingerbread
- Grapefruit Breakfast I
- Grapefruit Breakfast II
- Pumpkin Shell Casserole

Canned vegetables
- Green beans
- Corn
- Peas
- Beets
- Asparagus

Fresh vegetables
- Tomatoes
- Corn on the cob
- Carrots
- Celery
- Cucumbers
- Zucchini
- Cabbage
- Potatoes
- Potato-Cheese Patties

Desserts
- S'mores and variations
- Shaggy Dogs
- Cinnamon Brown Bears
- Pineapple Upside-Down Cake
- Doughnuts and variations
- Fried Pies
- Fairy Rings
- Baked Apples
- Banana Boats
- Mock Angel Food Cake
- Dutch Oven Cobbler
- Butterscotch Pie
- Butterscotch Sweets
- Cheryl's Gingerbread Dumplings
- Apple Crisp
- Wacky Cake
- Buddy Burner Cobbler
- Ash Cake Turnovers
- Canned Fruits
- Fresh Fruits
- Cookies
- Homemade goodies

Sample five-day menu plan

DAY 1

Breakfast

Onion and Pepper Omelet
English muffins with jelly
Coffee, hot chocolate
Orange juice

Lunch

Poor Boy Sandwich with salami, bologna, cheese, lettuce, and pickles
Corn chips
Carrot sticks
Apples
No-bake cookies
Lemonade

Dinner

Barbecued chicken
Corn on the cob
Tossed salad
Russian tea

Campfire snack

Banana Boats

DAY 2

Breakfast

Granola with canned peaches
Coffee, hot chocolate
Tea, orange juice

Lunch

Bagels with cream cheese, salami
Pretzels
Oranges
Lemonade

Dinner

Steamboats
French bread
Russian tea

Campfire snack

S'mores

DAY 3

Breakfast

Hot cereal, raisins, honey
Cantaloupes
Coffee, hot chocolate
Tea, orange drink

Lunch

½ can tuna per camper
Hard-boiled eggs
Crackers
Apples
Gorp
Water

Dinner

Canned stew
Cucumbers with creamy salad dressing
Logan bread and butter (see Backpack Cookery recipes)
Tea, hot chocolate, liquid gelatin drink

Campfire snack

Butterscotch Sweets

DAY 4

Breakfast

Grapefruit halves
Bacon and eggs cooked in grapefruit shells
Coffee, hot chocolate

Lunch

Tacos
Celery and carrot sticks
Cheryl's Gingerbread Dumplings
Lemonade, cherry drink

Dinner

Kabobs
Cabbage wedges
Bread sticks or biscuits
Sassafras tea

Campfire snack

Blackberry cobbler in Dutch oven

DAY 5

Breakfast

Calamity
Cinnamon Brown Bears
Coffee, orange drink

Lunch

Nut bread (see Backpack Cookery recipes)
Cream cheese
Peanut butter
Fruit cocktail

Dinner

Macaroni and Cheese Chili
French bread
Carrot sticks
Choose drinks from leftover powdered mixes

Campfire snack

Pineapple Upside-Down Cake

Recipes

Introduction to recipes

Editor's Note: All recipes are for 12 people and should be used on trips of less than one week. Recipe ingredients and instructions are set in italics.

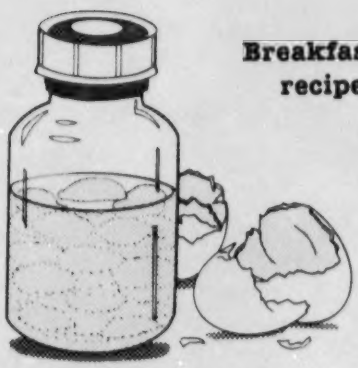
If you are also teaching metrics to your students, have them make some of the recipes using metric measurements. They can convert ingredients using the following approximate conversions:

Metric Conversion Table

1 teaspoon	5 milliliters
1 tablespoon	15 milliliters
1 cup	30 milliliters or ¼ liter
1 pint	½ liter
1 quart	1 liter
1 gallon	3¾ liters
1 ounce	30 grams
1 pound	½ kilogram

These recipes have been tested both at home and under field conditions. Field conditions include using No. 10 tin cans to cook in, a pair of pliers for lifting hot cans, and a wooden spoon for stirring; and experiencing various kinds of weather—hot, cold, windy, rainy, sunny, and cloudy.

Breakfast recipes



Carrying eggs in a plastic jar

Method of Cooking:
Skillet

CEREALS, HOT AND COLD

Cereal menus are the same as those discussed in the *Backpack Cookery* module. Campers may want to experiment with toppings, however.

Canned peaches are a favorite cereal topping with many groups. Two large cans of sliced peaches provide sufficient cereal topping for a group of 12. Peach juice can also serve instead of milk on the cereal.

EGGS

Eggs carry well when broken into a plastic jar and can be poured out when ready to use. Store them in a cooler.

Basic Scrambled Eggs

18 eggs
1½ c. milk or 1 Tbsp. per egg
3 Tbsp. Durkee's dressing
Salt, pepper

Variations:

Meat sauce
Dried onion flakes

Grated cheese
Chopped green pepper
Spaghetti seasoning
Canned mushrooms
Dried beef or boiled ham (or meat leftover from supper the previous night)

Safety Tip:
Make sure leftovers that will spoil, such as ham, are kept on ice.

Method of Cooking:
Skillet

Clam Scramble

Basic scrambled egg mixture plus
3 8-oz. cans of minced clams
6 cubes beef bouillon
¾ c. water
¼ c. soy sauce
3 Tbsp. flour
¼ c. finely chopped green pepper
¼ c. finely chopped celery
½ c. finely chopped green onion

Drain clams, but reserve liquid. Combine clam juice, water, bouillon cubes, and soy sauce—heat. Thicken with flour, stirring constantly. In another pan, add clams and vegetables to egg batter and cook. Top with the warm sauce.

Method of Cooking:
Tin can

Tin Can Breakfast

6 No. 10 tin can buddy burners (made at school or home)
12 slices of bread
24 strips of bacon
12 eggs
Salt, pepper

Cut the bacon strips in half and fry two halves on top of your stove. Eat out the center of a piece of bread and place the bread hole directly over the crisp bacon strips. Break an egg into the hole and cover with two more half-strips of bacon. Turn once.

Method of Cooking:
Paper bag and "hobo" stick

Paper Bag Breakfast

12 paper bags
12 eggs
12 strips of bacon
Salt, pepper

Breakfast in a paper bag

Use paper bags with seamless bottoms, or make your own from a section of paper from a large grocery bag. Gather the top with a string and fasten it onto your "hobo" stick. Place bacon in the bottom of each bag and allow to warm over coals until the sack is coated with grease. (This forms an oil-base seal for the sack.) Break an egg on top of the bacon. Roll down the bag in one-inch folds and poke a stick through the folds to hold the bag over the hot coals, not flames. Cooking will take about 5 to 10 minutes.

Top off your meal by boiling water in a non-wax paper cup for tea.

Omelets can be as simple or gourmet as you choose to make them. For younger tastes, cheese, bacon, and sausage are good choices. Adults might enjoy mushroom, zucchini, or shrimp fillings.

Method of Cooking:
Skillet

Basic Omelet

18 eggs
½ c. water
1 tsp. salt
1 tsp. Tabasco sauce
½ c. butter

Beat eggs, water, salt, and sauce until blended. Heat 1¼ Tbsp. butter in pan and spoon individual omelet serving in pan. Run the flat part of a fork around the edges of the omelet to let uncooked portions slide to the bottom of the pan.

When the mixture is creamy, but no liquid remains on top, spread 2 Tbsp. filling along the center and fold the omelet in thirds, bringing each edge slightly past center.

Many ingredients work well for omelet fillings. A few suggestions are listed below, but use your imagination and create your own.

Avocado-Bacon Omelet Filling

3 avocados, mashed
12 slices bacon, crumbled
1 Tbsp. chopped onion
Salt, pepper

Cheesy Shrimp Omelet Filling

¾ lb. thin-sliced cheese
3 4½-oz. cans shrimp
Salt, pepper

Reserve juice from the cans of shrimp to use instead of water in the Basic Omelet Recipe.

Onion and Pepper Omelet Filling

3 medium onions, chopped
2 green peppers, chopped
1 c. grated Swiss cheese

Zucchini Omelet Filling

3 c. sliced zucchini (about 3 medium)
1½ c. chopped onions
½ c. butter
1 c. Parmesan cheese
Salt, pepper

Saute zucchini and onions in butter. Stir in cheese, salt, and pepper.

Mushroom-Tomato Omelet Filling

3 ripe tomatoes, cut up
1 large can or 1 qt. fresh mushrooms
12 slices bacon, cooked and crumbled

Saute tomatoes and mushrooms in ½ c. butter. Sprinkle bacon on top.

Variations: Substitute three onions for the tomatoes.

A recipe familiar to Girl Scouts, Calamity also provides a hearty breakfast for campers.

Method of Cooking:
Skillet

Calamity

4 16-oz. cans sliced potatoes
1 large onion, chopped
1 green pepper, chopped
1½ lb. bacon
2 dozen eggs
Salt, pepper

Fry the bacon and drain it on a paper towel or a sand-free rock. Fry the potatoes, onion, and green pepper in the excess bacon grease. When potatoes are ready, add eggs and spices. Cook until eggs are done. Sprinkle bacon on top and serve.

Variations:

1. Add small chunks of cheese to the egg batter.
2. Substitute ham, luncheon meats, or salami for the bacon.

Method of Cooking:
Skillet or aluminum foil griddle

PANCAKES

Pancakes are a time-consuming breakfast for a group. Think twice before including them on your menus.

The batter is easy to prepare, however. Several mixes require only the addition of water. Pre-measure the dry mix needed for your group and seal in a plastic bag. Write any directions for preparation on a piece of masking tape and stick onto the bag.

Camp Pancakes

4 c. complete pancake mix
2 ⅔ c. water

Combine dry mix and water until moistened and smooth. Pour about 3 Tbsp. batter per pancake onto greased, heated surface. Cook pancakes until dry around edges. Turn and cook other sides.

Variation: Try adding one or more of the following to the basic pancake batters: (Amounts are for 12 people.)

1. 2 cans blueberries, drained

2. ½ c. coconut
3. ½ c. nuts
4. 1 17-oz. can corn, drained
5. 1½ c. grated cheddar cheese
6. 1 pkg. chopped, dried ham
7. ½ c. chopped, dried fruit
8. ¼ c. bacon pieces
9. 1 c. fresh fruit

PANCAKE TOPPINGS

To prepare homemade syrup at the campsite, combine two parts sugar to one part water. Boil together until sugar dissolves. Add maple flavoring, if you like.

Other pancake toppings include powdered sugar, jelly, peanut butter, cream cheese, or honey butter.

Honey Butter

2 sticks margarine or butter
1 pint honey

Mix well and serve.

EASY BREAKFAST BREADS

English muffins (12) or Bagels (12)
Serve with jelly, honey, or cream cheese.

Tasty Toast

Toast and butter slices of white, wheat, or raisin bread, then try the following toppings:

1. *Sugar and cinnamon*
2. *Sugar and cocoa*
3. *Applesauce*
4. *Baby food*
5. *Stewed dried fruits with sugar*
6. *Crushed pineapple on raisin toast*

Method of Cooking:
Reflector oven
Aluminum foil griddle
Foil in coals
"Hobo" stick

Do not throw away fruit peelings—carry them out.

FRESH FRUIT

Bananas (12)
Oranges (12)
Grapefruit (6)
Cantaloupe (3)

BREAKFAST SWEETS

Dessert recipes are included in a later section; however, those that are particularly suited for breakfast include the following:

Cinnamon Brown Bears
Pineapple Upside-Down Cake
Doughnuts
Fried Pies
Fairy Rings

Lunch recipes

Sandwiches make a good main course for campground lunches. Cheeses, fresh fruits, tomatoes, hard-boiled eggs, cookies, and crunchies, such as potato chips, corn chips, and pretzels, can round out the menu.

Here are some sample sandwiches.

SANDWICH SPECIALS

Hero, Poor Boy, or Submarine Sandwich

Variety of luncheon meats or thin-sliced ham, roast beef, or turkey
Two cheese selections
Pickles
Tomatoes
Shredded lettuce
Salad dressing

Assemble sandwiches on choice of bread.

Variation: Wrap the sandwich in cabbage leaves instead of bread.

Tuna or Salmon Salad

4 small cans tuna or salmon
4 hard-boiled eggs, chopped
4 stalks celery, diced
1 c. pickle relish
1 small jar mayonnaise or salad dressing (about 1⅓ c.)
4 Tbsp. lemon juice

Combine all ingredients and mix well. Use this salad immediately. Mayonnaise may spoil, if not refrigerated. Keep unused portions cold, or throw them away.

Grilled Sandwich Supreme

24 slices rye bread
1 small jar mayonnaise or salad dressing (about 1⅓ c.)
⅔ c. chutney
2 Tbsp. curry powder
2 tsp. salt
6 c. shredded cabbage, green or red
12 slices chicken or turkey or 4 small cans boned chicken
Butter or margarine

Combine mayonnaise, chutney, curry powder, and salt. Mix with shredded cabbage.

Butter outsides of bread. Place the meat on one piece of bread; spread the chutney mixture on the other. Grill together.

Warning—Mayonnaise or salad dressing will spoil if not refrigerated. Keep unused food made with mayonnaise or salad dressing cold or throw it away.

Method of Cooking:
Skillet or aluminum foil griddle

Grilled Luncheonwich

24 slices wheat bread
12 slices luncheon meat
12 slices Swiss cheese

Butter outsides of bread. Place luncheon meat and cheese inside and grill both sides.

Bagels and Cream Cheese

12 bagels
3 8-oz. pkg. of cream cheese
1 stick hard salami

Spread 1 oz. cream cheese on each bagel half and top with slices of salami.

Method of Cooking:
Skillet

Sloppy Joes

3 lb. hamburger
2 onions, diced
3 pkg. Sloppy Joe mix
1 15-oz. can tomato sauce

Cook meat, drain. Add onions and mix. Cook for 15 to 20 minutes. Serve on hamburger buns.

Bacon, Lettuce, and Tomato Sandwiches

30 slices bacon
24 slices bread
12 slices tomato
12 lettuce leaves
1 small jar mayonnaise or salad dressing

Note: If you don't plan to build a fire at lunch, fry the extra bacon at breakfast. Be sure to keep bacon in a cooler until you use it.

Supper recipes

MEALS FROM A CAN

Beef stew
Chili
Spaghetti and meatballs
Ravioli
Macaroni with beef
Lasagna
Chicken and dumplings
Chow mein: Chicken, beef, or shrimp

These meals are easy to prepare. Open the cans and place them directly on the campfire or stove, or heat the contents in a pot.

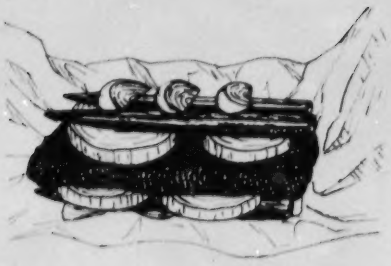
MEALS IN FOIL PACKETS

Steamboats
Ham-Sweet Potato-Pineapple Packets
Chicken-Onion-Potato Packets
Hot Dog Wraps
Eggplant Parmesan
Corn on the Cob
Baked Potatoes

Allow 18 inches of heavy-duty aluminum foil per person for each of these meals.

For proper cooking results, seal each packet in the following manner: Fold opposite edges of the foil together with at least two ½-inch folds. Leave a little air space around the food contents. Fold open edges in the same manner. Avoid puncturing holes in the foil. Place the foil packets on campfire coals, usually for about 20 minutes.

Method of Cooking:
Aluminum foil over coals



Steamboats in foil

Original Steamboats

3½ lb. hamburger
3 16-oz. cans sliced potatoes or 6 raw sliced potatoes
6 medium carrots
3 17-oz. cans corn
2 onions, sliced
Cheese (optional)
Salt, pepper
12 pats butter (about ¼ c.)

Form hamburger patties, surround with vegetables, and package them in foil with the steam seal.

Younger tastes have different vegetable favorites. Experience with first graders has produced this variation of the Original Steamboats recipe.

First Graders' Steamboats

3½ lb. hamburger
3 zucchini
3 onions, sliced
6 potatoes, sliced
4 tomatoes
4 ears corn
1 bunch broccoli
½ head cauliflower
12 slices American cheese
Salt, pepper
12 pats butter

A variety of vegetables allows campers to prepare steamboats for individual tastes.

Ham-Sweet Potato-Pineapple Packets

12 thick slices ham, or canned ham slices
3 16-oz. cans sweet potatoes
3 8-oz. cans pineapple rings
1 c. brown sugar
12 pats butter (¼ c.)

Drain pineapple and reserve syrup. Arrange the ham, sweet potatoes, and pineapple rings on foil. Sprinkle 1 Tbsp. of brown sugar on top. Place a pat of butter on top of the brown sugar and moisten with reserved pineapple juice. Wrap in foil with the steam seal, and place on coals. Steam for 10 to 15 minutes.

Chicken-Onion-Potato Packets

3 chickens, quartered
6 potatoes, sliced
4 carrots, chopped
2 onions, sliced
Salt, pepper
12 pats butter (¼ c.)

Seal individual servings in foil and cook over coals 30 minutes or until done.

Hot Dog Wraps

12 jumbo hot dogs or 24 regular hot dogs
2 onions, chopped
12 slices cheese
12 or 24 bacon strips

Split hot dogs lengthwise. Place chopped onion and cheese inside, then wrap bacon strips around the hot dogs. Seal individual servings in foil and cook over coals 10 to 15 minutes.

Eggplant Parmesan

4 unpeeled eggplants, chopped small
2 lb. sliced mushrooms
4 onions, chopped
4 green peppers, chopped
4 tomatoes, sliced (optional)
3 cloves of garlic, minced
Chopped parsley
2 tsp. oregano
2 tsp. basil
2 tsp. dill weed
Salt, pepper
4 c. grated cheese (mozzarella, Swiss, cheddar, or brick)
2 c. Parmesan cheese
8 Tbsp. butter

Wrap individual servings in heavy-duty foil. Cook over coals for 30 minutes.

Corn on the Cob

12 ears corn
Salt, pepper
Butter

Remove husks and silk from corn. Wrap ears in a double thickness of aluminum foil. Cook over coals for 15 to 20 minutes.

Baked Potatoes

12 potatoes
12 8-inch foil sections

Wrap potatoes individually in foil and cover with ashes and embers. Turn several times. Let cook about 45 minutes.

Variation: Slice the potatoes first and add butter, salt, and pepper. Cook about 15 minutes.

MEALS ON A BARBECUE GRILL

For a barbecued meal for 12, the following amounts of meat would be required.

Hamburger (5 lbs.)
Flank steak (4)
Sirloin steak (4-5)
Pork steaks (18)
Chicken (6)

On a campout barbecue, use the simplest methods of preparing the meat. Place sirloin steaks and hamburgers on the grill without marinating. When preparing pork or chicken, baste with a mixture of lemon juice, water, and butter until the meats are almost done. Then coat each side with barbecue sauce.

Flank steaks should be given special treatment, however.

Method of Cooking:
Grill

Flank Steaks

4 flank steaks
Large jar Italian salad dressing

Marinate scored flank steaks inside the cooler for four hours or overnight. Or, place the steaks in the marinating oil before leaving home and store in cooler.

Grill, coating each side with barbecue sauce.

"HOBO" STICK COOKERY

Hobo stick cookery presents a dilemma in cutting the sticks. Ecologically, the underbrush cannot withstand every camper cutting a stick for roasting marshmallows, hot dogs, or bread sticks.

Leaders might ask each person to bring a green hobo stick on the trip. One twig from each camper's home is easier to justify than 12 out in the woods at a campsite.

Another solution is for the camp leader to carry skewers, but these do not work well for bread sticks.

Dead twigs can be used by wrapping aluminum foil around the tip of the stick and partway down the shaft to protect it from flames. The foil also acts as an inside reflector oven for cooking the bread stick.

Method of Cooking:
Stick
Skewer

Use plastic bags for mixing foods.

Bread sticks

4 c. biscuit mix
1 c. water

An easy way to prepare bread sticks is to place the mix and the water inside a plastic bag, secure the top, and knead the outside of the bag until the dry ingredients have been thoroughly moistened. Be careful not to puncture the plastic with a fingernail.

Use sticks 1½ to 2 inches in diameter. Mold the dough evenly and thinly around the sticks. Bake over the fire for 10 to 20 minutes.

Cheese-onion bread sticks

Stuff the bread stick holes with 1 c. diced cheese and ½ c. chopped onion.

Cheese-raisin bread sticks

Stuff the bread sticks with 1 c. each of diced cheese and raisins.

Vienna sausage bread sticks

Stuff the bread sticks with 2 Vienna sausages each. Four 5-oz. cans will serve a group of 12.

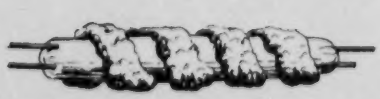
Bacon twists

Wrap one slice bacon around each hobo stick and fry it to the desired crispness. Then wrap the biscuit mix around the bacon and bake.

Cooking bread sticks

Hot dog bread sticks

Cook 12 hot dogs on sticks before coating with biscuit mix and browning.



Hot dog bread sticks

Method of Cooking:
Stick

Pig in a Poke

36 miniature sausages
3 8-oz. cans crescent rolls

Toast three miniature marshmallows per stick and wrap each in biscuit dough. Pinch edges of the dough together and brown over fire.

Variations: Subsitute lean sausage links, small hot dogs, or Vienna sausages for the meat.

Method of Cooking:
Stick
Skewer

Drumsticks

3 lb. hamburger
2 eggs
1 onion, chopped
Salt, pepper
1 tsp. summer savory
2 Tbsp. Worcestershire sauce
1 c. crumbled corn flakes

Mix all ingredients thoroughly. Squeeze carefully onto stick, around the end, and in a thin layer down the stick's shaft. Avoid large chunks of meat, air space, and big pieces of corn flakes. Cook slowly and turn frequently. Generally, more of the meal ends up in the ashes than on the stick.

Method of Cooking:
Stick
Skewer
Grill

Kabobs

3 lb. sirloin steak, round steak, or Spam
3 doz. cocktail tomatoes
4 16-oz. cans whole potatoes
3 green peppers, chunked
24 small onions
4 zucchini, chunked
1 lb. mushrooms (optional)
Bacon pieces

Thread meat and vegetables onto stick or skewer and cook over coals until done, about 10 to 20 minutes.

The variety of vegetables listed above allows each person to make kabobs to suit individual tastes.

Ham Kabobs

3 lb. canned ham
3 16 oz. cans whole sweet potatoes
3 cans pineapple chunks
2 cans peach halves
Bananas, apples (optional)

ONE-POT MEALS

Method of Cooking:
Dutch oven or No. 10 tin can on a campfire or camp stove

Fresh Hamburger Stew

1½-2 lb. hamburger
2 onions
1 large green pepper
2 tomatoes
2-3 zucchini
2 large jars spaghetti sauce
4 bouillon cubes (chicken or beef)
Salt, pepper, oregano
1 large can mushrooms, or 1 lb. fresh mushrooms
Butter, if desired

Hamburger stew is a flexible recipe that's filling and easy to prepare. Vegetables can be sliced or chopped. Add ingredients together or separately. Any way you prepare it, the results are still good.

Variations: Add carrots, potatoes, and rice, or a combination of the three. Or, prepare rice separately and serve the stew spooned on top of it.

Saute fresh mushrooms for appetizers, then add the ones left to the stew. The spaghetti sauce and a small amount of water are sufficient liquid for the stew.

Two pots will be needed to hold the stew. This easily accommodates any vegetarians in your group; make one pot free of hamburger and bouillon.

Method of Cooking:
Dutch oven or No. 10 tin can on a campfire or camp stove

American Spaghetti

2 lb. hamburger
3 onions, diced
1 green pepper, diced
1 8-oz. can mushrooms
2 8-oz. cans tomato sauce
2 16-oz. cans tomatoes
4 c. water
1 Tbsp. salt
1 tsp. pepper
Tabasco, 12 drops or more
Ripe olives (optional)
Spaghetti, at least 8 oz.

Brown meat and drain. Add onions and green pepper and simmer for five to six minutes. Add all other ingredients, including uncooked spaghetti. Cover tightly and simmer about 40 minutes or one hour, stirring occasionally. Uncover and simmer for an additional 15 minutes.

Quick Spaghetti

3 lb. hamburger
4 small onions, diced
1 green pepper, chopped
1 8-oz. can mushrooms
4 16-oz. cans spaghetti
Salt, pepper, chili powder to taste

Brown meat and drain. Add other ingredients. Mix well, heat, and serve.

Grand Round Steak Stew

3 lb. round steak, cut into bite-size chunks
6 potatoes, cut into chunks
8 carrots, cut into chunks
2 onions, diced
1 green pepper, diced
2 8-oz. cans mushrooms
4 cans pizza sauce
2 cans water
Salt, pepper, oregano, bay leaf

Flour and brown chunks of round steak. Add all other ingredients in a large kettle and simmer for 1-2 hours. Or boil the stew slowly for about 45 minutes or until done.

Meatballs Stroganoff

3 15-oz. cans meatballs in brown gravy
3 tsp. dried onion or 3 small onions
3 cans drained, sliced mushrooms
1½ c. sour cream
2 large pkgs. of noodles
Salt

Boil noodles according to package instructions. Heat meatballs, onions, and mushrooms. Add sour cream to meat mixture when it is ready to serve. Serve the meat over noodles.

A camper's substitute for sour cream can be made with the following recipe.

Camper's Sour Cream

1½ Tbsp. vinegar
1½ c. evaporated milk

Mix ingredients and let stand for about five minutes before serving.

Macaroni and Cheese Chili

3-4 pkg. macaroni and cheese dinners
3-4 15-oz. cans chili
Butter or margarine
Milk
Salt

Boil macaroni according to the package instructions. Drain water and add milk, butter, cheese sauce, and chili. Heat thoroughly and serve.

For small appetites, use ingredients from three boxes of macaroni and three cans of chili. For adults, use four of each.

Chili is a favorite on cold or crisp days.

Chili

3 lb. hamburger
3 onions, chopped
3 garlic cloves, minced
3 15-oz. cans chili
3 15½-oz. cans red kidney beans
3 cubes beef bouillon
3 28-oz. cans tomatoes
3 8-oz. cans tomato sauce
3 tomato-sauce cans of water
3 Tbsp. mustard
3 Tbsp. vinegar
Salt, pepper
Oregano
Chili powder
Cayenne pepper

Brown hamburger and drain. Add other ingredients and simmer 20 to 30 minutes.

Crackers, celery and carrot sticks, and slices of cheddar cheese round out the meal.

Tacos

3 15-oz. cans chili, heated
36 taco shells or 2 large bags corn chips
½ head lettuce, shredded
2 onions, diced
3 tomatoes, diced
1 lb. grated cheese

Spoon heated chili into taco shell. Layer with any or all of the ingredients listed.

Variation: Substitute corn chips for taco shells and serve in a bowl.

Tuna Special

2 medium onions, chopped
2 c. celery, chopped
4 Tbsp. butter
2 10-oz. cans cream of mushroom soup
2 10-oz. cans cheddar cheese soup
4 6½-oz. cans tuna
2 5-oz. cans chow mein noodles

Saute onion and celery in butter. Blend in soups, stirring constantly until mixture is simmering. Stir in tuna and heat through. Serve over chow mein noodles.

Variation: Serve mixture over cooked egg noodles or rice.

NOVELTY MEALS

Novelty meals are just that—novel cooking techniques aimed at capturing a spirit of adventure and imagination. These menus should be used when you have time in camp and are prepared for some culinary failures.

Method of Cooking:
Large kettle or No. 10 tin cans over a campfire

Stone Soup

12 smooth, clean rocks or stones
12 c. water
Large kettle or 3 No. 10 tin cans
Salt
Pepper
Oregano
Bay leaf
Onion flakes

Leader's contribution: 3 8-oz. cans tomato sauce, 12 bouillon cubes.

Campers' contributions: Each camper must bring a couple of vegetables suitable for a stew.

The story of stone soup lends itself to a campsite cooking adventure. In the story, a hiker who had used up all of his food reserve came into a group campsite, famished. Being a clever sort, he devised a plan for dinner. Out in the middle ground of the camp, he prepared a fire, placed a pot full of water on top, and with fanfare began dropping his lucky stones into the water. With each rock he loudly proclaimed how delicious was stone soup and stirred his pot while inhaling deeply, rolling his eyes, and smacking his lips.

Many of the other campers were friendly and inquisitive. They wandered over to see what was happening. To the first onlookers, the hiker praised the soup's delectable, savory broth, and added, "It would be even better if I had a couple of potatoes." A fellow camper volunteered to give him a couple of hers. The next to stroll by

overheard, "It would be even better if I had a couple of carrots." Of course, he got those, too. Another group was told, "It would be even better if I had a couple of onions." The story continues until the stone soup was indeed delectable.

Method of Cooking:
In the shell over coals

Baking in an orange shell

Orange Shell Gingerbread

6 oranges, halved and hollowed
1 pkg. gingerbread mix

Follow the package directions for preparing the gingerbread batter. Fill an orange shell half full of batter and replace the top or other half. Wrap in aluminum foil and cook in coals until the center of the cake springs back when pressed lightly. The cake will have an orange flavor.

Grapefruit Breakfast I

6 grapefruits, halved and hollowed out
12 strips of bacon
12 eggs

Place a strip of bacon at the bottom of each grapefruit shell, then break an egg on top. Cook directly over the coals or wrap in aluminum foil.

Variation: Add chopped onion, chopped green pepper, and cheese slivers.

Grapefruit Breakfast II

6 grapefruits, halved and hollowed out
6 5-oz. cans Vienna sausages
12 eggs

Divide the Vienna sausages and their juice into the 12 grapefruit shells. Top with one egg per shell and cook over coals.

Pumpkin Shell Casserole

1 pumpkin
Fresh Hamburger Stew (See listing under One-Pot Meals)

Cut a large lid in the top of a pumpkin. Clean out the seeds and inside membrane. Place the pumpkin shell on the grill and fill the cavity with Fresh Hamburger Stew. The stew will have a pumpkin flavor.

CANNED AND FRESH VEGETABLES

With most canned goods, three cans will provide enough for 12 servings. For fresh vegetables, the following amounts should serve a group of 12.

Carrots (1 bag)
Celery (1 stalk)
Cucumbers (3)
Zucchini (3-4)
Potatoes (12)
Cabbage (1 large or 2 small heads)
Corn on the cob (12 ears)

Method of Cooking:
In a Dutch oven or skillet over a campfire or camp stove

Potato Cheese Patties

12 c. water
9 c. dehydrated potatoes or 12 fresh potatoes
1½ c. powdered milk or regular
1½ c. biscuit mix
3 Tbsp. dried onions
3 c. cheese, cut in chunks
Salt, pepper to taste
Margarine
Flour or cornmeal

Mix all ingredients and all water if necessary to make a stiff dough. Roll in flour and cornmeal, form patties, and fry in one-half inch of margarine.

Desserts

Almost everyone enjoys and looks forward to dessert. A campfire provides opportunities to experiment with several methods of cooking.

Method of Cooking:
Stick

S'mores

1 box graham crackers (containing 30 double crackers)
12 Hershey chocolate bars
1 small bag marshmallows

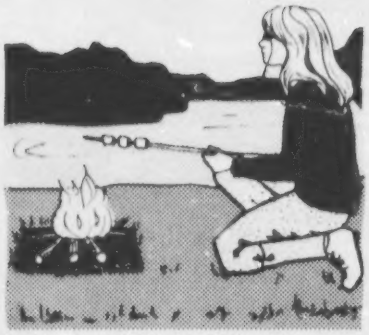
Toast marshmallows over the coals with a skewer or hobo stick. Place four squares of chocolate and a few toasted marshmallows between the halves of a graham cracker, making a sandwich.

These ingredients allow for at least two S'mores per person.

Young campers are enthusiastic about this dessert and usually want "some more," giving the treat its name.

Variations:

1. Use graham crackers, peanut butter, and marshmallows (sometimes called Robinson Crusoes).
2. Use graham crackers, toasted peanuts, and marshmallows.
3. Use chocolate graham crackers and marshmallows.
4. Use cookies and marshmallows.
5. Use apple slices, peanut butter, and marshmallows.
6. Use apple slices, chocolate bars, and marshmallows.
7. Use marshmallows and graham crackers, without the chocolate.
8. Insert chocolate chips into the marshmallows. Toast and place in the graham cracker sandwich.



Toasting marshmallows for s'mores

Shaggy Dogs or Hot Chocolate Snowballs

1 can chocolate syrup
1 bag marshmallows
1 bag angel flake coconut

Heat the can of chocolate syrup over the campfire. Toast marshmallows and dip them into the syrup. Roll the dipped marshmallows in coconut.

Method of Cooking:
Aluminum foil on coals or on top of a grill

Cinnamon Brown Bears

12 hot dog buns
1 stick butter, melted
1 c. sugar
1-2 Tbsp. cinnamon
12 12-inch aluminum foil pieces

Mix sugar and cinnamon together. Roll each bun in the melted butter and sprinkle with the sugar and cinnamon. Wrap in foil and heat. Turn frequently to keep from burning. Place on coals, not flames or embers, or on top of a grill.

Method of Cooking:
Aluminum foil on coals

Pineapple Upside-Down Cake

2 loaves pound cake
2 cans crushed pineapple

Drain pineapple and reserve syrup. Slice the cakes and cover with crushed pineapple. Drizzle 1 Tbsp. syrup over each slice. Wrap in foil. Heat over coals, but avoid burning.

Variation: Instead of pineapple, use cherries, blueberries, peaches, apples, blackberries, or other canned fruit.

Method of Cooking:
Dutch oven or No. 10 tin can on a campfire or camp stove

Doughnuts

2 cans biscuits
Cooking oil
1 c. sugar
1 c. powdered sugar
1 c. sugar mixed with 1-2 Tbsp. of cinnamon

Cut biscuits into fourths and fry the pieces in 1 inch or more of hot oil, keeping the pieces separated. Drain the doughnuts on paper towels, then roll in sugar, powdered sugar, or cinnamon sugar.

You might try placing the three doughnut coatings in separate, labeled lunch bags. Shake the doughnuts inside the bags until well-coated.

Variations:

1. Roll raw dough in nuts, raisins, and a mixture of brown sugar and butter before frying.
2. Glaze the doughnuts with a mixture of 1 cup powdered sugar and ⅓ cup boiling water. Dip doughnuts into the warm glaze.
3. Glaze the doughnuts, then roll in coconut.
4. Make a jelly doughnut by separating a whole biscuit section, adding 1 Tbsp. jelly and carefully pinching edges together before frying.
5. Make a custard doughnut by substituting vanilla, chocolate, or lemon pudding inside a whole biscuit section. Pinch edges together and fry.
6. For fried fruit pies, place 1 Tbsp. of prepared fruit pie filling, such as cherry or apple, inside a whole biscuit section. Pinch edges together and fry.

Method of Cooking:
Stick
Skewer

Fairy Rings

12 doughnuts
12 marshmallows

Put a marshmallow in the center of a doughnut. Toast the two over a fire until the marshmallow is browned to taste.

Method of Cooking:
Aluminum foil over coals or in a Dutch oven

Baked Apples

12 apples
2 c. sugar (granulated, brown, or mixed)
Cinnamon, nutmeg, or apple pie spice
1 c. raisins
1 c. chopped nuts
12 pats of butter (¼ c.)
12 12-inch aluminum foil pieces

Remove apple cores. Stuff centers with mixture of sugar, spices, raisins, nuts, and butter. Wrap the apples individually in foil and cook in coals or a Dutch oven for 20 to 30 minutes.

Method of Cooking:
Aluminum foil over coals

Banana boats

Banana Boats

12 small bananas
1 6-oz package chocolate chips
1 small bag miniature marshmallows

Peel back a section of banana along its inside curve. Scoop out a part of the banana and fill the cavity with chips and marshmallows. Place the peeling back over the chips and marshmallows. Wrap in aluminum foil. Bake on coals until warm, but not hot.

Method of Cooking:
Stick or skewer
Reflector oven

Mock Angel Food Cake

2 loaves white bread, unsliced
3 14-oz. cans sweetened, condensed milk
3 c. coconut

Remove outer crust of bread and cube or cut loaves into ¾-inch strips. Dip into milk and roll in coconut. Toast over a campfire or in reflector oven.

Variations:

1. Roll strips in cocoa and sugar instead of coconut.
2. Roll strips in cinnamon and sugar.
3. Use evaporated milk instead of sweetened, condensed milk.

Method of Cooking:
Dutch oven

Dutch Oven Cobbler

1 yellow cake mix
3 cans fruit pie filling, such as cherry or peach
1 stick melted butter

Grease Dutch oven. Pour in the pie filling. Sprinkle dry cake mix on top of the fruit and drizzle melted butter over the cake mix. Place lid on the Dutch oven. Set the pot on burning charcoal and cover the lid with hot charcoal. Do not peek for 25 minutes.

Butterscotch Pie

2 graham cracker pie shells (purchased or homemade)
2 boxes instant butterscotch pudding mix
4 c. milk

Combine milk and pudding mix. Beat for 2 minutes and pour into pie shells. Chill for at least one hour in an ice cooler or in a cave, if there's one nearby. Leftovers should be refrigerated or thrown out.

Variation: Try other pudding mix flavors, such as chocolate, pistachio, lemon, banana cream, or vanilla.

Method of Cooking:
Dutch oven
No. 10 tin can
Skillet

Butterscotch Sweets

1 12-oz. pkg. butterscotch bits
½ c. peanut butter or 1 6-oz. pkg. of peanut butter bits
1 3-oz. can chow mein noodles

Melt the peanut butter and butterscotch pieces. Stir in noodles to coat. Dip out by teaspoonful onto waxed paper.

Variations:

1. Use 1 c. peanuts instead of peanut butter.
2. Use caramels instead of butterscotch bits.
3. Use Captain Crunch cereal instead of noodles.

Method of Cooking:
Dutch oven
No. 10 tin can

Cheryl's Gingerbread Dumplings

3 cans applesauce
1 box gingerbread mix
½ c. water

Add water to applesauce and bring to a boil. Mix gingerbread as directed on box, but add only enough water to make a thick batter. Drop by spoonfuls into the boiling sauce. Cover with foil or lid. Continue cooking over low fire for 15 to 20 minutes. Don't peek.

Method of Cooking:
Dutch oven

Apple Crisp

1 lb. dried apples, plus 8 c. water
or 2 21-oz. cans apple pie filling, plus 1 can water
2 tsp. cinnamon
½ tsp. nutmeg
1 Tbsp. lemon juice (optional)
4 c. oats
1 c. whole wheat flour
¾ c. honey
1 tsp. salt

Soak apples in water for 10 minutes, or dump the apple pie filling and water into a foil-lined Dutch oven or cake pan. Sprinkle with cinnamon, nutmeg, and lemon juice.

Mix remaining ingredients and spread over apples. Cover Dutch oven and bake in coals for 15 to 20 minutes, or bake in cake pan in reflector oven until done.

Dian Thomas, author of *Roughing It Easy*, created this Dutch oven cake recipe.

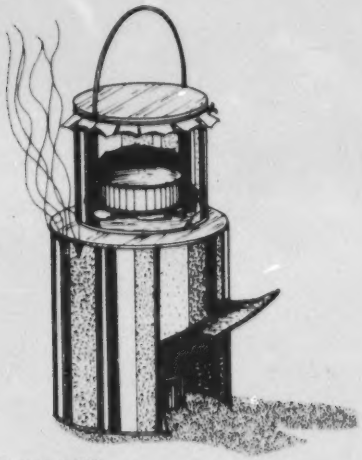
Method of Cooking:
Dutch oven

Wacky Cake

3 c. flour
2 c. sugar
3 tsp. soda
1 tsp. salt
6 Tbsp. cocoa
2 Tbsp. vinegar
2 tsp. vanilla
¾ c. oil
1-2 c. miniature marshmallows
1 c. milk chocolate chips

Combine flour, sugar, soda, and salt in a sealable plastic bag and mix. Add liquids; knead mix until moist. Spoon mixture into foil-lined Dutch oven. Bake for 35 to 45 minutes. Remove lid and sprinkle the cake immediately with one or two cups of miniature marshmallows and one cup milk chocolate chips. Place lid on oven, remove from coals, let set for five minutes or until ready to serve.

Method of Cooking:
Tin Can with Buddy Burner



Tin can oven

Buddy Burner Cobbler

12 greased tuna cans
12 1-lb. coffee cans
2 cans sliced peaches
3 c. biscuit mix
2 c. sugar
1-3 Tbsp. cinnamon
½ c. butter

Mix sugar and cinnamon together. Into each tuna can, place a few peach slices, some juice, 1 Tbsp. of the cinnamon sugar mixture, 1 tsp. butter. Sprinkle dry biscuit mix about ½ inch deep. Sprinkle more cinnamon sugar on top of the mix and add another pat of butter.

Place three small stones on top of the buddy burner. Set the tuna can on top of the stones. Cover the tuna can with a coffee can and bake about 20 to 30 minutes.

Method of Cooking:
Campfire ashes

Ash Cake Turnovers

4 c. biscuit mix
1 c. water
12 Tbsp. filling (1 can any fruit pie filling or 1 c. cheese and onion pieces)

Prepare dough as you would for bread sticks. Press the dough into 24 pizza-thin biscuits. Place 1 Tbsp. filling on a biscuit and cover with a second biscuit. Pinch edges together and place in a bed of white ashes. Cook on both sides. Tap off ashes and serve.

CANNED FRUITS

Canned peaches, pears, plums, and fruit cocktail are good suggestions for camping trips.

FRESH FRUITS

Apples, oranges, plums, grapes, and nectarines store well for meals and snacks on camping trips.

Breads

Method of Cooking:
Campfire ashes

Ash Cakes

2 c. biscuit mix
½ c. water

Prepare dough as you would for bread sticks. Press the dough into a thin, pizza-shaped biscuit. Place in a bed of white ashes. Cook on both sides. Tap off ashes and serve with butter and honey or jelly.

Method of Cooking:
Reflector oven
Dutch oven

Biscuits

(This recipe makes six servings)
2 c. flour
3 tsp. baking powder
1 tsp. salt
¼ c. shortening
¾ c. milk

Mix dry ingredients in bowl. Cut in shortening with a pastry blender or a fork, then stir in milk. Roll out dough and cut with a biscuit cutter, or use the rim of a juice glass. Bake in a hot oven until brown.

Bread sticks

See recipes in section on hobo stick cookery.

CORN BREAD

Historically, early trappers and hunters baked thin cakes, made from parched corn and boiling water, for food during long journeys. They called the bread "journey cakes." Later, the name was shortened to "johnny cakes." The recipe is a relative to the corn bread made today.

Method of Cooking:
Reflector oven
Dutch oven

Corn Bread

(This recipe makes six servings.)

1 egg
1½ c. buttermilk
½ tsp. baking soda
½ c. flour
1½ c. corn meal
1 tsp. sugar
3 tsp. baking powder
1 tsp. salt
¼ c. shortening

Mix all ingredients and pour into a well-greased pan or into muffin tins. Bake in a hot oven until done, about 20 to 25 minutes.

Method of Cooking:
Reflector oven
Dutch oven

Muffins

1 egg
½ c. milk
¼ c. liquid oil
1½ c. flour
½ c. sugar
2 tsp. baking powder
½ tsp. salt

Beat the egg, then stir in milk and oil. Combine dry ingredients and add to batter, stirring until moistened. Grease muffin tins. Bake for 20 to 25 minutes, or until brown.

Apple Muffins

Follow the basic muffin recipe, but add ½ tsp. cinnamon to the dry ingredients and stir in 1 c. grated raw tart apples to the final mixture.

Blueberry Muffins

Follow the basic muffin recipe, but blend in 1 c. fresh blueberries or 1 can blueberries, well-drained.

Bran Muffins

1½ c. sugar
1 c. boiling water
2 eggs, beaten
2 c. buttermilk
2½ c. flour
2½ tsp. soda
½ c. shortening
1 c. bran buds
2 c. whole bran cereal
½ tsp. salt

Pour boiling water over the bran buds and whole bran cereal. Let stand 10 minutes. Cream sugar, shortening, eggs, and buttermilk. Add soda, flour, salt, and bran. Mix well. Fill muffin pans half full. Bake 20 minutes, or until brown.

SOURDOUGH

Sourdough is a bread associated with the Gold Rush era of 1849. Prospectors who carried only meager supplies of food while mining for gold at least knew how to make bread in their camps.

Here are two recipes for making your own starter, or sourdough culture. One is made as the prospector made it, without yeast. A more modern version, using yeast, is faster to make.

No-Yeast Starter

4 c. flour
2 Tbsp. sugar
1 Tbsp. vinegar
Water

Mix the ingredients in an earthenware crock, adding enough water to make a light, creamy batter. Cover the crock with a cheesecloth and leave in a warm place for 7 to 10 days. If the starter is working properly, it will bubble and give off a sour smell.

Yeast Starter

1 pkg. dry yeast
2 c. warm water
2 c. flour

Dissolve the yeast in warm water. Stir in the flour and leave overnight in a warm place.

In using your sourdough starter, always leave about one cup to continue the strain. Add enough flour and water to restore the mixture to its original quantity, then refrigerate.

Method of Cooking:
Reflector oven
Dutch oven

Sourdough Bread

2 c. sourdough starter
1 Tbsp. cooking oil
½ tsp. baking soda
1 cup flour

Put one cup sourdough starter in a large mixing bowl. Add oil, baking soda, and flour. Dough should be thick.

Turn out on floured board and work in enough additional flour to keep dough from sticking. Knead until smooth and elastic. Form into two loaves. Place in greased loaf pans and brush tops with oil or shortening. Set pans in warm place and let dough rise until double in size.

Bake about one hour in hot oven at about 375°F.

Method of Cooking:
Reflector oven
Dutch oven

Sourdough Biscuits

Follow the recipe for Sourdough Bread, but add more flour for a stiffer dough. Then roll out the dough immediately and cut into biscuits. Bake in a hot oven for 10 to 12 minutes.

Beverages

For most beverages, individual servings can be prepared in an insulated cup.

Coffee (½ cup instant coffee will make 24 cups)

Tea (1 tea bag will make 2 cups)

Hot chocolate (¼ cup mix will make 1 serving)

Instant breakfast drinks (1 Tbsp. will make 1 serving)

Fruit crystals (1 Tbsp. per serving or 1 heaping cup for 16 servings)

Flavored gelatin (3-4 servings per box)

Pudding (3 servings per box)

Spiced tea (2 Tbsp. mix per serving; 2 cups for 16 servings)

Milk (½ cup instant dry milk plus 1 Tbsp. powdered coffee creamer per cup of water)

By figuring out the approximate amount you plan to use on the trip, and adding a couple of tablespoons for good measure, you can package any of the powdered beverages in doubled plastic bags for ease in carrying.

Several companies make excellent hot chocolate mixes, in individual packages and in large canisters. The canister eliminates the problem of disposing of foil packets that often will not burn totally. Less expensive is an instant cocoa mix you make yourself, using cocoa, sugar, and instant dry milk.

Spiced hot chocolate is a favorite drink.

Instant Cocoa Mix

½ c. cocoa
6 Tbsp. sugar
2 c. instant dry milk

Mix ingredients together thoroughly. Allow 3 or 4 Tbsp. per cup of hot water.

Cocoa Mocha

¾ c. instant cocoa mix (homemade or store-bought)
¾ c. instant coffee
1½ c. powdered coffee creamer (optional)

Mix ingredients. Use 3 or 4 Tbsp. per cup of hot water.

Spiced Hot Chocolate

1½ c. instant cocoa mix (homemade or store-bought)
1½ c. powdered coffee creamer
½ tsp. (scant) each of any two of these spices:
ground cloves
nutmeg
cinnamon
allspice
ginger

Mix ingredients. Use 3 or 4 Tbsp. per cup of hot water.

Spiced Tea

1 8-qt. can powdered lemonade
1 8-qt. can powdered orangeade
¼ can instant tea
½ can sugar
1 Tbsp. cinnamon

Mix all ingredients together. Use 2 Tbsp. per serving. This amount will make approximately 36 cups of tea.

Instant breakfast drinks can be served hot or cold at any meal; some have Vitamin C added. For a change, try a fruit milk shake.

Fruit Milk Shake

8 c. instant dry milk
2 c. fruit crystals
8 Tbsp. powdered coffee creamer
8 c. water

Combine all ingredients and drink.

Mulled Cider

1 gal. apple cider
3-4 cinnamon sticks
18 whole cloves

Heat cider with cinnamon sticks and cloves until hot. Strain and serve.

Mulled cider is good at any meal.

Lesson Plans

The following lesson plans are offered as a suggested and field-tested means of teaching this subject material. Times are estimated for 50-minute class periods; however, the time needed for each lesson may vary depending upon the teacher and class. Pages marked as student handouts in the appendix may be reproduced for distribution.

No. 1

Title:	Fire building
Method:	Lecture, discussion, outside demonstration
Time:	50 minutes
Purpose:	To acquaint students with proper fire-building methods and to stress fire safety
Instructional Aids:	Matches, water, three sizes of wood, first-aid simulation situations (Appendix 5)
Facilities:	Classroom and outside

Outline: **CLASS DISCUSSION**

I. Fire safety
   A. Protection of humans
   B. Protection of environment
II. First aid
   A. Stress correct first-aid principles
   B. Have small groups react to hypothetical medical situations (Appendix 5)
III. Basic fire-building strategy
   A. Three wood sizes
      1. Tinder
      2. Kindling
      3. Fuel
   B. "A" frame base
   C. Tepee structure for starting fire
   D. Use of matches
      Lighting tips
   E. Four basic fire shapes
      1. Tepee
      2. Crisscross
      3. Indian
      4. Log Cabin

F. Cooking uses of each shape
   1. Quick, hot fire (Tepee)
   2. Big, deep bed of coals (Crisscross)
   3. Small fire, heat in center (Indian)
   4. Good bed of coals, slow burning (Log Cabin)

CLASS EXERCISE

Have students collect wood for building a small group fire or assign wood collection as homework.

No. 2

Title:	Small group fire building
Method:	Outdoor class exercise
Time:	50 minutes
Purpose:	To construct fire shapes, to build small fires, and to boil water in a can.
Instructional Aids:	Matches, water, shovel, soup cans, Russian tea
Facilities:	Outdoors

Outline:

CLASS EXERCISE

I. Divide students into small groups of four or less and assign each group to build a fire.
   A. Build "A" frame
   B. Add tinder
   C. Light fire
   D. Feed tinder and kindling
   E. Make basic fire shape
      1. Draw shape assignments from hat
      2. Let groups decide upon cooking method

II. After fire is built, have each group bring a cup of water to boil in a can.

STUDENT CHECKLIST

I. How many matches were needed to start fire?
II. How much time was required to start fire?
III. How long did the fire burn? Up to 15 minutes?
IV. Was the drinking water hot?

No. 3

Title: Testing fire-building ability

Method: Class exercise, discussion

Time: 50 minutes

Purpose: To test ability to choose fire for specific cooking needs and to test fire-building skills.

Instructional Aids: Matches, water, shovel

Facilities: Outdoors

Outline: CLASS EXERCISE

I. Building fires
   A. Divide students into small groups of four or less.
   B. Have each group build a fire for a specific cooking project.
   C. Give each group one match.

II. Rebuilding fires (Thunderstorm simulation)
   A. Douse each fire with ½-gallon of water.
   B. Ask students to rebuild fires.

No. 4

Title: Making Equipment

Method: Class exercise

Time: 50 minutes

Purpose: To prepare campground equipment for cooking; to consider equipment uses.

Instructional Aids: Jobs to be drawn, cardboard box, aluminum foil, clothes hanger, wire cutters, ruler, No. 10 tin cans, heavy wire, ice pick, tuna cans, corrugated cardboard, large scissors, wax, stove, melting container, tin snips, forked green stick, large cake pan, fine-mesh screen.

Facilities: Classroom

Outline: **CLASS EXERCISE**

I. Divide class into small groups.
   A. Have groups draw lots to discover their building assignment.
      1. Reflector oven
      2. Tin can stoves
      3. Buddy burners
      4. Charcoal heating element for reflector oven
      5. No. 10 tin can with handle
      6. Clothes hanger skewers
   B. Give groups step-by-step directions on how to make their projects.

II. Construct equipment.

No. 5

Title: Meal Planning

Method: Discussion, small group exercise

Time: 50 minutes or more

Purpose: To allow students to plan a meal for 12, taking into account the basic four food groups.

Instructional Aids: Menu Suggestion Sheet (Appendix 1),
Basic Four Meal Planner Sheet (Appendix 2),
Menu Planning Sheets (Appendix 3),
Shopper's Guide Sheet (Appendix 4)

Facilities: Classroom

Outline: **DISCUSSION**

1. Discuss importance of good nutrition and the basic four food groups.
2. Pass out Basic Four Meal Planner Sheets (Appendix 2), along with Menu Suggestion Sheets (Appendix 1).

CLASS EXERCISE

1. Divide class into groups of 4 to 5. Have each group plan a day's meals using the menu suggestions and filling out the Basic Four Meal Planner Sheet.
2. Discuss each group's choices and whether or not they fulfill the basic four food group requirements.

OPTIONAL EXERCISE

1. If time permits and you want your students to do some

comparative shopping as part of a camping trip preparation, then distribute Menu Planning Sheets (Appendix 3) and Shopper's Guide Sheet (Appendix 4).
2. With students working in the same small groups, have them fill out menu planning sheets with the meals they had planned. Leave blank the cost section.
3. Make a grocery list, using the meals planned by the entire class. Select 15 to 20 items for comparison of costs and fill out shopper's guide sheet.
4. Decide which stores are to be used in the comparative analysis.
5. Arrange transportation and take or send small groups to different stores. Have them compare the items on the sheet in each store.
6. When class reassembles, compare the cost findings of the groups.
7. Decide which store would be best in terms of low prices and availability of food items.

No. 6

Title: Afternoon Excursion

Method: Field trip, class exercise

Time: 2½ hours

Purpose: To build appropriate fires; to prepare a meal on newly constructed equipment.

Instructional Aids: Equipment, food, matches, first-aid kit, water, utensils, foil.

Facilities: Park, campground, or school yard

Outline:

CLASS EXERCISE

I. Build fire and prepare food. Assign each group one dish to prepare for the entire class.
II. Eat and discuss results.
III. Clean up—stress that the students have an ethical responsibility to leave an area as clean or cleaner than they found it.

Glossary

BUDDY BURNER — The burning component of a tin can stove. Often made from a tuna can, corrugated cardboard, and wax.

BLUE FREEZE PACK — Commercial container to be frozen at home and used in cooler as refrigerant.

DUTCH OVEN — Heavy kettle with lid used for simmering, frying, or baking.

FIRE-BUILDING SHAPES — **"A" Frame:** A triangular base, formed with medium-sized sticks, to elevate tinder and allow for air circulation.
Crisscross: Fuel laid across each other in layers, alternating in direction.
Indian: Fuel laid as spokes of a wheel, concentrating heat in the center of a small fire.
Log Cabin: Fuel laid in a square or rectangle, building sides upward and inward resembling a log cabin.
Tepee: Fuel set upright in a tepee fashion.

FUEL — Large wood added to a fire to maintain it.

GREEN STICK — Green, as opposed to a dead stick. Freshly cut from a tree and used for roasting foods over a fire. The sap from the green wood keeps the stick from burning.

KINDLING — Twigs, about the diameter of the thumb, used to establish a fire.

REFLECTOR OVEN — Camping equipment used for baking. The open side of the three-sided oven is heated by a fire.

SKEWERS — Metal or wooden sticks used for roasting foods over a fire.

TIN CAN STOVE — No. 10 tin can designed for frying, boiling, or baking for one or two persons.

TINDER — Small shavings, pine cones, or tiny twigs that catch on fire easily.

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Appendix 1—Menu Suggestion Sheet

Breakfast

Hot cereal
Cold cereal with bananas, fresh or canned peaches
Eggs
Tin Can Breakfast
Scrambled eggs
Clam Scramble
Paper Bag Breakfast
Omelets
- Avocado-Bacon
- Cheesy Shrimp
- Onion and Pepper
- Zucchini
- Mushroom-Tomato

Calamity
Pancakes
Sweets
Toast varieties
English muffins and jelly
Cinnamon Brown Bears
Pineapple Upside-Down Cake
Doughnuts
Fried Pies
Fairy Rings
Fruit
- Oranges
- Grapefruits
- Cantaloupes

Lunch

Luncheon meats
Hero Sandwich
Submarine Sandwich
Grilled Sandwich Supreme
Tuna or Salmon Salad
Grilled Luncheonwich
Sloppy Joes
Bacon, Lettuce, and Tomato Sandwich
Hard-boiled eggs
Tomatoes
Fresh fruit
Potato chips
Corn chips
Pretzels
Cookies

Supper

Meals in a Can
- Beef Stew
- Chili
- Spaghetti and Meatballs
- Ravioli

- Macaroni with beef
- Lasagna
- Chicken and Dumplings
- Chow mein: chicken, beef, shrimp, beef-pepper, and Oriental varieties

Meals in Foil Packets
- Steamboats
- Ham-Sweet Potato-Pineapple packets
- Chicken-Onion-Potato packets
- Hot Dog Wraps
- Eggplant Parmesan
- Corn on the cob
- Baked Potatoes

Barbecued Meals
- Hamburgers
- Sirloin steaks
- Pork steaks
- Chicken
- Flank steaks

Hobo Stick Cookery
- Hot dogs
- Breadsticks
  - Bacon twists
  - Cheese-onion
  - Vienna sausage
- Pig in a poke
- Drumsticks
- Kabobs

One-Pot Meals
- Fresh Hamburger Stew
- Grand Round Steak Stew
- Meatballs Stroganoff
- Macaroni and Cheese Chili
- American Spaghetti
- Quick Spaghetti
- Chili
- Tacos
- Tuna Special

Novelty Meals
- Stone soup
- Orange Shell Gingerbread
- Grapefruit Breakfast I
- Grapefruit Breakfast II
- Pumpkin Shell Casserole

Canned vegetables
- Green beans
- Corn
- Peas
- Beets
- Asparagus

Fresh vegetables
- Corn on the cob
- Carrots

Celery
Cucumbers
Zucchini
Cabbage
Potatoes
Potato-Cheese Patties

Basic Four Food Groups

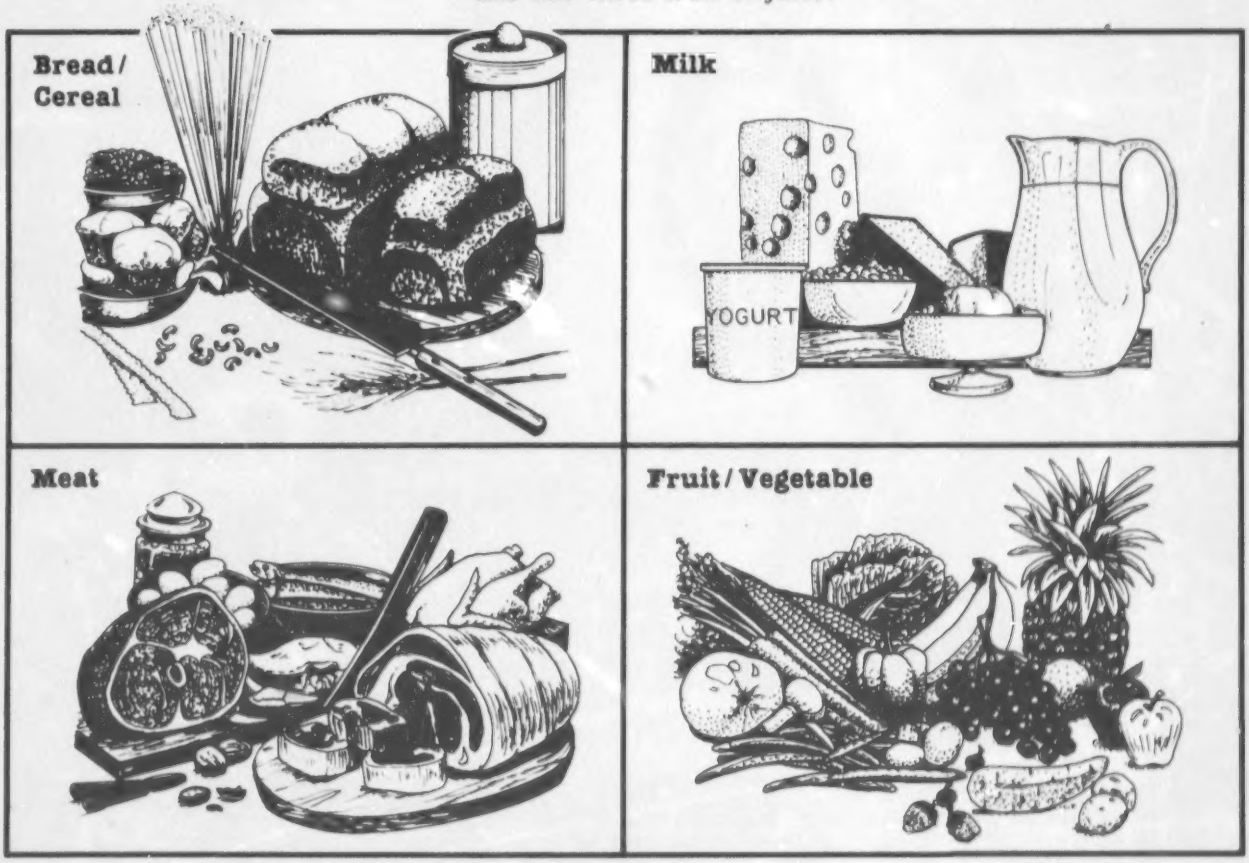
Nutritionists recommend that you plan your meals around the Daily Food Guide Groups in order to meet the body's daily nutrient needs. Try to include for each day's meals:

1. **Milk group:** Two to four servings of milk, cheese, ice cream, cottage cheese, yogurt, or other dairy products. (Adults—2 servings; Teens—4 servings; Children—3 servings)

2. **Meat group:** Two or more servings of meat, fish, poultry, cheese, eggs, dry beans, dry peas, nuts, or peanut butter.

3. **Bread-cereal group:** Four or more servings of bread, oatmeal, rice, dry breakfast cereals, cooked cereal, spaghetti, macaroni, or crackers.

4. **Fruit-vegetable group:** Four or more servings of fruits and vegetables including one dark green or yellow vegetable and one citrus fruit or juice.



Appendix 8—Basic Four Meal Planner Sheet

Breakfast

Milk
Meat
Bread-Cereal
Fruit-Vegetable

Equipment Needs

Lunch

Milk
Meat
Bread-Cereal
Fruit-Vegetable

Equipment Needs

Supper

Milk
Meat
Bread-Cereal
Fruit-Vegetable

Equipment Needs

Needs per day:
Milk group: 2-4 servings
Meat group: 2 servings
Bread/Cereal group: 4 servings
Fruit/Vegetable group: 4 servings

Appendix 3—Menu Planning Sheet

Day_____ Number of people_____

BREAKFAST MENU

_____

_____

_____

_____

_____

Food Item Needed	Amount	Cost Per Item*	Total Cost For Item*

*Total Breakfast Cost: _____

WORK ASSIGNMENTS: Cooking: _____

Cleanup: _____

*Complete after shopping.

Menu Planning Sheet

Student handout

Day_____ Number of people_____

LUNCH MENU

_____

_____

_____

_____

_____

Food Item Needed	**Amount**	**Cost Per Item***	**Total Cost For Item***

*Total Lunch Cost: _____

WORK ASSIGNMENTS: Cooking: _____

Cleanup:_____

*Complete after shopping.

Menu Planning Sheet

Day_____ Number of people_____

SUPPER MENU

_____

_____

_____

_____

_____

Food Item Needed	**Amount**	**Cost Per Item***	**Total Cost For Item***

*Total Supper Cost: _____

WORK ASSIGNMENTS: Cooking: _____

Cleanup: _____

*Complete after shopping.

Menu Planning Sheet

Student handout

Day_____ Number of people_____

SNACKS

_____

_____

_____

Food Item Needed	Amount	Cost Per Item*	Total Cost For Item*

*Total Snack Cost: _____

WORK ASSIGNMENTS: Cooking: _____

Cleanup:_____

*Complete after shopping.

Appendix 4—Shopper's Guide Sheet

Name of Store_____ **Kind of Store**_____

ITEM	AMOUNT NEEDED	WEIGHT	CHEAPEST BRAND AND COST	TOTAL COST FOR ITEM
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				

TOTAL FOOD COST $_____

Appendix 5—First-Aid Simulation Situations

Situation One

Your group is in charge of fire building. While attending the fire, a camper is accidentally shoved into the fire and his clothing catches fire. What should you do?

Situation Two

Your group is in charge of boiling a gallon of water for hot chocolate. The water comes to a rapid boil. While transporting the hot water, half of it spills all over the blue jeans of one of your group. The camper's legs become covered with large blisters. What should you do?

Situation Three

Your group is in charge of preparing a bed of hot coals for dinner. While smoothing the coals into a flat bed, one person falls, hand first, into the coal bed. What should you do?

Situation Four

Your group is in charge of fixing the salad. While slicing carrots with a sharp knife, one person cuts his finger. Blood is dripping. What should you do?

Situation Five

Your group is in charge of gathering firewood. When one person breaks a limb into smaller pieces, a piece of wood flies through the air and hits one of your group on the head. The wound begins bleeding heavily. What should you do?

Appendix 6—First-Aid Simulation Solutions

Situation One

Roll the person whose clothes are aflame on the ground. Suffocate the flame with a sleeping bag, sheet, clothing, or other large item. Apply ice or cold water to the burns. If the person is badly burned, take him to a doctor.

Situation Two

Take off the individual's pants or cut off the leg of the blue jeans. Denim is a tight weave and retains heat for a long period. Apply ice or cold water to the affected area, then wrap the burn in clean cloth. If the leg is badly scalded or burned, take the person to a doctor.

Situation Three

Quickly help the person get his hand out of the coals. Place the hand in ice or cold water. First-aid kits should carry chemical cold packs for emergencies, if no ice is available. Wrap the hand in clean cloth. Seek medical attention if the burn is blistered or charred.

Situation Four

Pinch the finger cut together and apply pressure to stop the bleeding. Clean the cut with hydrogen peroxide or soap and water. Apply an adhesive bandage to hold the cut together.

Situation Five

Apply pressure with an absorbent material. The skull area bleeds profusely, and may frighten onlookers even if the injury is minor. However, watch for signs of a concussion: headache, unconsciousness, incoherence, dizziness, vomiting, or paleness.

Appendix 7—Suggested Written and Practical Examinations

Written exam

1. List five rules that you should follow when camping.
2. List the Basic Four food groups and two foods in each group.
3. Designate the number of servings that should be eaten daily from each food group.
4. Plan a meal for 12 persons, keeping in mind the Basic Four food groups and good nutritional planning.

Meal _____

Menu _____

_____

_____

_____

_____

Practical exam

1. To test your students' ability to make some inexpensive camp cooking equipment, divide them into groups of two. Have each pair make one of the following:
   a. reflector oven
   b. tin can stove
   c. buddy burner and damper
   d. aluminum foil griddle
   e. aluminum foil saucepan
   f. aluminum foil frying pan
   g. aluminum foil baking sheet
2. To test your students' ability to build fires, have them divide into groups of three or four.
   a. Assign each group a specific type of fire to build.
   b. Ask each group to name which cooking methods would work best with their type of fire.
   c. Douse each fire with water and have students rebuild.
   d. Check groups to make sure they safely extinguish their fires.
3. To test your students' ability to plan and prepare an outdoor meal, divide your class into groups of 10-12.
   a. Have each group plan a meal for 12 people, using the menus in the module.
   b. Each group should make or get ahold of the equipment they need, do the necessary shopping, and plan the type of campfire most appropriate for preparing their meal.
   c. Each group should divide up responsibilities and prepare a meal using the appropriate cooking methods.
   d. After finishing their meal, ask group members to evaluate their experiences.

Appendix 8—Instructor's Key to Written Exam

Written exam

1. See "Rules for camping," p. 12.
2. See p. 3[illegible].
3. See p. 31.
4. See pp. 31-35.

Practical exam

1. a. See p. 25.
   b. See p. 26.
   c. See pp. 26-27.
   d. See p. 29.
   e. See p. 30.
   f. See p. 30.
   g. See p. 30.

2. See p. 20.

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Specialists' Regions

Outdoor Skills Education Specialists and Education Consultants will assist you in obtaining materials and scheduling equipment and films that are available from the Department of Conservation. They also offer workshops to provide training in outdoor skills and conservation education.

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